Contrast Sensing Application - Guiding on Negative Spaces

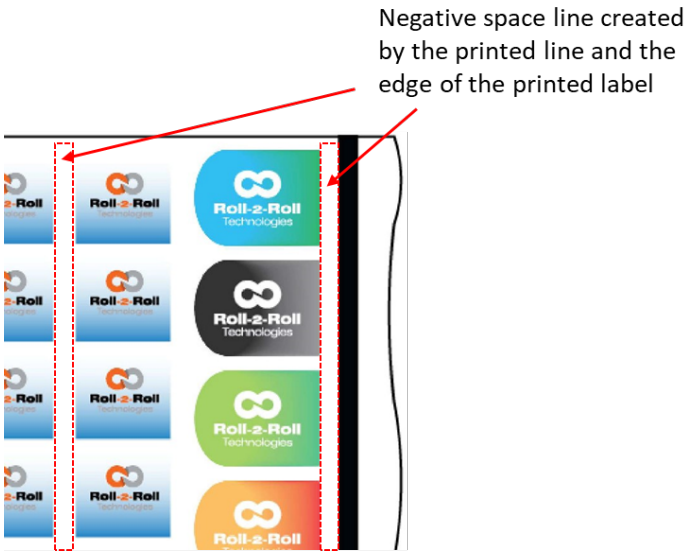
Blog Post

Contrast sensing allows for a variety of applications to guide or monitor your web. These applications help you eliminate the need for a printed line. Eliminating the printed line saves the cost of ink to print the line and the web material where the line would be printed.

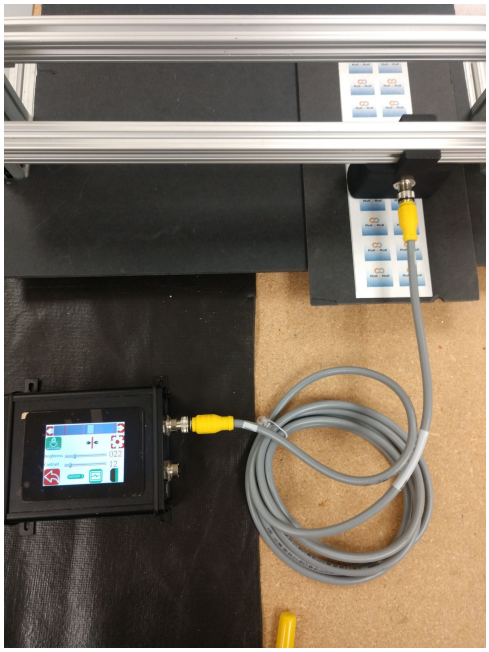
A contrast is any visible printed, embossed or laminated feature on a web. Most of the time, a visible feature is understood to be visible with the naked eye. However, it can include UV printed features that are not visible to the naked eye, but are detectable for a UV type of sensor or camera.

Tracking a negative space between labels

There is one application where the web is guided by tracking a negative space in between labels. If the labels have straight borders and the width of the negative space is constant it is a simple application, as simple as line guiding.



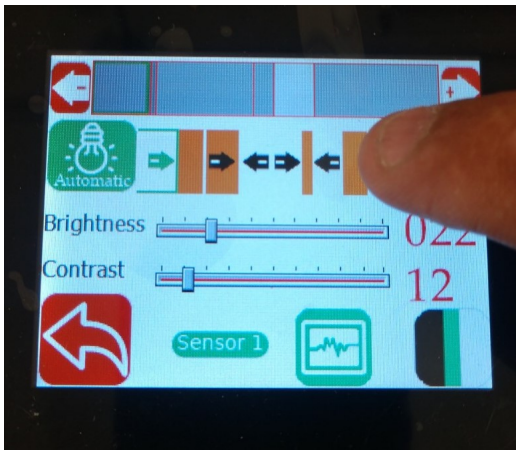
However, negative spaces can have variation of widths, especially when the label color matches the negative space color, or when the labels are separated by negative spaces. Sensors and controllers using the current technology have issues with this situation. Typically, in a web guiding setting, the web guide will drift when the sensor loses track of the guiding feature. The sensor technology developed by Roll-2-Roll Technologies handles this situation and maintains the web aligned, even when there are breaks in the feature being tracked.



SCU5 Controller and Contrast Sensor Demo

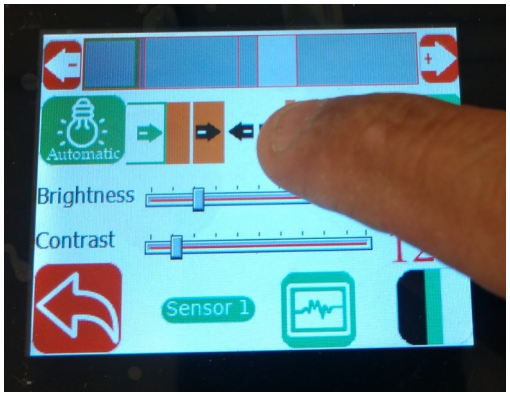
Teaching a Roll-2-Roll® Controller for Contrast Sensing

Teaching our controller to track a contrast is simple. When the operator is in the contrast sensing teaching mode he or she can select the option to follow a feature as if it is a line. Then they can select which feature to follow.



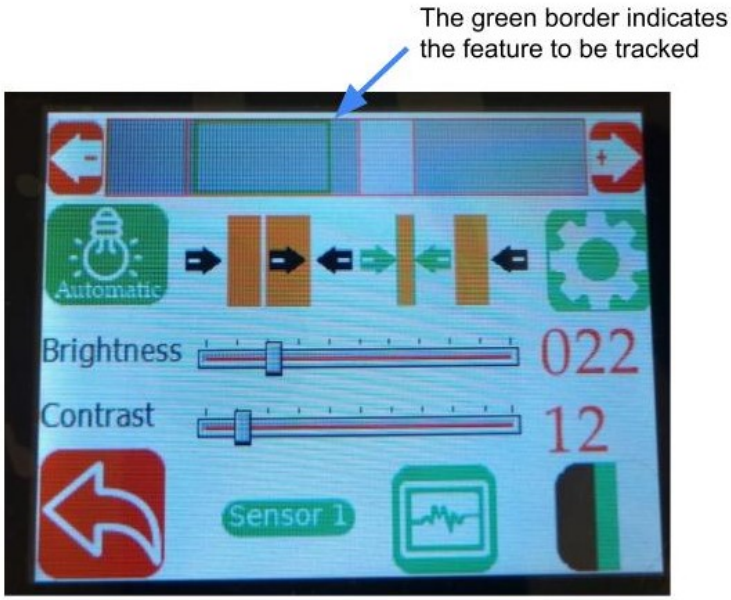
Select a contrast tracking mode from the multiple modes available on the operator interface

When the contrast mode screen is accessed, the operator can select one of the many contrast tracking modes by using the touch screen. Once the contrast tracking mode is selected then you can select the contrast feature to be tracked. The contrast feature is shown on the top of the screen.

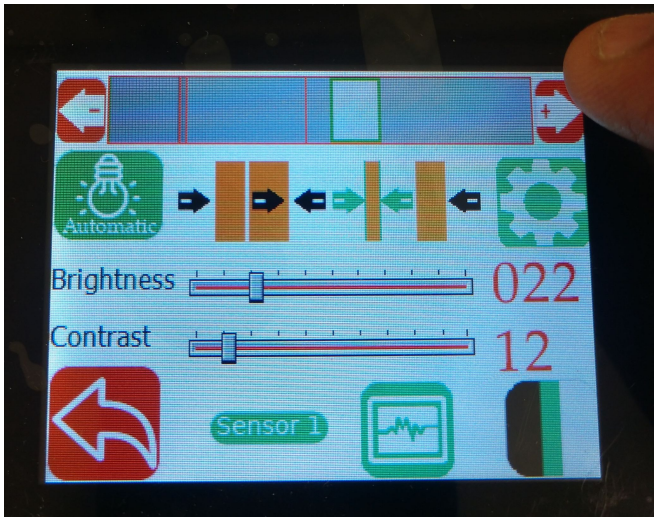


Select the tracking mode desired

The contrast feature to be tracked is highlighted with a green border. If you need to change the feature to be tracked, you can highlight the feature by using the left and right icons on the top.



Feature to be tracked





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trast sensing application setups. Click here to see the video

Breaks in the contrast feature

One problem with contrast guiding using the negative space is the breaks in the space. This is caused by the separation of the labels. Most systems will drift when encountering such a problem, but not our Roll-2-Roll Controllers®. Our controllers detect this break and will lock the position of the web guide where it last tracked the line. As soon as the line is within the sensor range, it will track the line again. This happens because our system is programmed to only track a line that has the same width and color hue that was selected during the teaching mode and to lock the web guide in its last position when the width or color hue parameters have

changed.

In our example above the space between the labels would be visible to the sensor until the color of the label is the same as that of the line. At that point, the controller would lock the position of the web. Once there is any color difference between the negative space and the label, the system will resume tracking the feature that was selected in the teaching mode.

There are many other applications in contrast sensing that we will discuss in future posts. If you are interested in learning more about contrast sensing and applications, sign up for our monthly newsletter. This will give you access to many of the applications, webinars and other instructional materials as they become available.