ALLEN DATAGRAPH

ProSheet Documentation

For version 0.19 ProSheet Firmware

Last Updated May 25, 2004

This document is written to describe the operating procedures of the Allen Datagraph ProSheet. The ProSheet front panel is shown below.

When you power the ProSheet software displays 0000 in the display. This is a page count meter that updates when the ProSheet cuts a sheet.

You load the media by threading the media as shown in the pictures below. Then close the cover. Press the Jog button to advance the media through the ProSheet.

Using the Menu

To enter the menus, or go down one level in the menu tree or select a new value for a parameter. Press the Select button. The display will now display one of the items on the menu. Pressing

cancel button will go up one level or exit the menu. Pressing cancel does not change the setting. Pressing the On/Off button while in the menu enters the current displayed value and starts the cutting operation. Rotating the knob while not in a menu jumps to the copy value menu item.

MENU TREE

bld – this menu command displays the current firmware software revision installed.
nn.nn build # or version

CAL – this menu setting allows correcting for mechanical variation in the grit wheel that drives the media through the nip roller. To calibrate the ProSheet set the calibration factor to 1.000. Cut a sheet 10 inches long using sheet mode. Measure the cut sheet. Divide the desired size by the cut size and enter this value as the calibration factor. E.g. suppose the cut sheet measures 10.1 inches long. Divide desired size / cut size = 10/10.1 = 0.990. This will reduce the number of steps the ProSheet motors take to travel 10 inches by 1%.
n.nnn (calibration factor 0.980 to 1.020)

COPy – This allows programming a number of copies to cut and then stop.
nnnn

Cut – this menu setting allows controlling the maximum cut speed of the cut motor. A value of 100% will make the cut motor travel at the maximum cut speed allowed. If the cut motor does not make it to the other side or does not cut correctly you can try reducing the cut speed.
nnnn (cut speed 10-100)%

FEEd – this menu setting allows controlling the maximum feed speed of the feed motor. A value of 100% will make the feed motor travel at the maximum feed speed allowed. If the feed motor acts erratically or feeds inconsistent lengths you can try reducing the feed speed.
nnnn (feed speed 10-100)%

OFFS
nn.nn distance between LED pointer and cut station. This is a constant of about 0.7 inches (1.78 cm).

OPEr – this menu allow selecting operating mode of the ProSheet. The ProSheet will operate in the mode last selected by the Change knob. See Operating modes described later.

ScAn – This menu item selects the scan mode of operation for the ProSheet.

tAr – Since the optical scanner is not in line with the cut station the ProSheet needs to advance to the target before cutting. The tAr parameter sets the distance between the target and where the cut will occur. A value of zero should cut right on the target. A negative value will leave a gap before the label. A positive value will cut a bleed on the label.
nn.nn

LABL – This menu item allow setting the Label size. This size can be measured by placing a scale (ruler) on the printed media and measure the size of the printed label size.
nn.nn

SPAC – This menu item allows setting the space or gutter between the printed labels.

nn.nn

2Cut – This menu item selects the two-cut mode of operation.

tAr – Since the optical scanner is not in line with the cut station the ProSheet needs to advance to the target before cutting. The tAr parameter sets the distance between the target and where the cut will occur. A value of zero should cut right on the target. A negative value will leave a gap before the label. A positive value will cut a bleed on the label.
nn.nn

LABL This menu item set the skip distance after the first cut before a 2nd cut action. The gutter should not have any printing until the next target. The scan distance for the gutter must be less than 6 inches (15.2 cm). If you are cutting a 5-inch/cm label with a 2-inch/cm gutter between frames the tar parameter should be about 0.47 inch (1.19 cm) and the space parameter should be 5.0 inch/cm.
nn.nn

SHEE – This menu item selects the sheet mode of operation.

nn.nn This menu item sets the size of the cut sheet.

rSEt – this menu item resets the page counter.

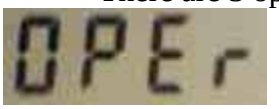
tCut – this menu item perform cut action upon pressing the select key while tCut is displayed. The function only works in off mode and ProSheet not paused.

Unit – this menu item sets the units of measure of distance parameters. The last selected unit is the unit that is used. If you change the units the distances select are converted to the new unit of measure.

Inch – this menu item selects inches for units measure for distances.

CEnt – this menu item selects centimeters for units measure for distances.

There are 3 operation modes for the ProSheet.



Scan Mode:

SCAN mode is designed for sheets of labels with no gutter between sheets.

- Setup:

1) Position the eye (operator to gear) over a target or over a label.
2) Train the eye for media colors. See procedure below.
3) Feed the material to a non printed area of label within 1 inch (2.54 cm) of the target.
4) Set up the parameters (tar, labl, & spac) for the scan operation.
5) Press the on/off button to start the scan operation.

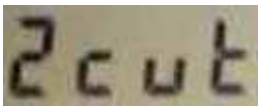
- ProSheet algorithm steps for scan mode:

1) Advance feed motor until the eye sees target. (The maximum distance for this scan is 1 inch (2.54 cm)
2) Advance the tar parameter + offset

3) Perform a cut
4) Advance Label - Offset -Target + Space /2
5) Go to step 1

The left example shows a 3-inch long label with a tar value of –0.375 inch, which cuts before the label. The right example cuts a 1-inch bleed off of the label. The cut line/sensor is shown offset for clarity.

2Cut Mode:



- This option will cut once at the top of the sheet and another time at the bottom of the sheet. This will cut out a gutter.
- Setup:

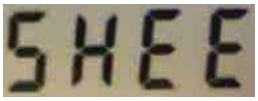
1) Position the eye (operator to gear) over a target or over a label.
2) Train the eye for media colors. See procedure below.
3) Feed the material to a non-printed area of label within 6 inches (15.2 cm) of the target.
4) Set up the parameters (tar, labl) for the two cut operation.
5) Press the on/off button to start the two-cut operation.

- ProSheet algorithm steps for two-cut mode:

1) Advance feed motor until the eye sees target. (The maximum distance for this scan is 6 inches (15.2 cm)
2) Advance the tar + offset parameter
3) Perform a cut
4) Advance the labl parameter
5) Perform a cut
6) Go to step 1

The left examples goal is to leave an 1/8 inch border before and after a 3-inch label. The right examples goal is to cut 1/4 inch bleed off of label. The cut line/sensor is shown offset at each position for clarity.

Sheet Mode:



- In sheet mode the ProSheet will cut equal size sheets. The size of the sheet cut is set with the sheet size parameter. Sheet mode is designed for blank media.

- Setup:

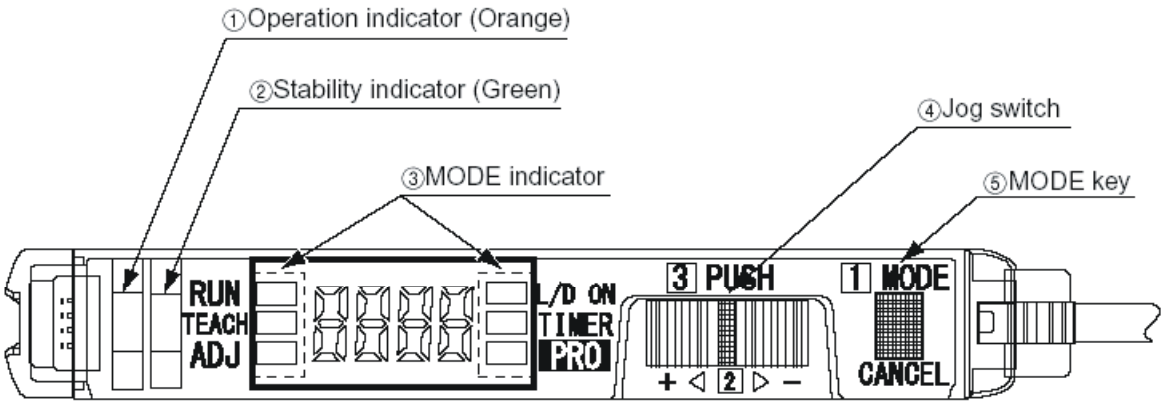
1) Set up the sheet size parameter
2) Press the on/off button to start the sheet operation.

- ProSheet algorithm steps for sheet mode:

1) Advance the sheet size parameter
2) Perform a cut
3) Go to step 1

Training the eye

There are several adjustable parameters built in to the SmartMark sensor that give the system its extreme flexibility. Some of the parameters can be automatically set by the microprocessors embedded in the system and some require manual intervention.



Sensitivity

1. In order to accurately sense the registration mark the SmartMark System operates using very fast signals at fairly low signal levels. All systems operating in this manner are subject to interference from outside electro magnetic sources. In order to limit the effects of outside interference the SmartMark system uses a high logic signal when the sensor is off the mark and a low logic signal when the sensor is on the mark. In normal operation the sensor sends a high logic signal when the sensor is on a light background and a low logic signal when on a dark registration mark (L on). The sensor allows for sensing light registration marks on dark backgrounds by changing its state so that the sensor send a high logic signal when on a dark background and a low logic signal when on a light registration mark (D on). The (L / D On) operation is set by pressing the mode key 3 times. The current setting will be displayed. If the jog switch is moved the opposite setting for the output operation will be displayed. If the jog switch is pressed, the digital display will blink quickly 3 times and the selected output operation will be confirmed. Press the "MODE" key 3 times or keep it pressed for 2 seconds or more to return to "RUN" mode.
2. The sensor changes its logic state when the reflective value passes the set threshold level. The sensor utilizes a self teaching program to set this threshold level. There are multiple methods for setting the threshold level, the preferred is the Two Level Teaching Mode which will allow you to set a middle ground threshold value. Select the "TEACH" mode by pressing the Mode Key once. Press the jog switch when red dot is on the material background. The display will blink then the "TEACH" (yellow light) will blink. This indicates that the second point is now ready for input. Move the sensor over the registration mark and press the jog switch, again the display will blink. The display will either indicate the word "GOOD" which indicates that stable sensing can be performed or "HARD" indicating stable sensing cannot be performed. The threshold value setting will be displayed then the display will blink with the characters "——". The incident light intensity will again be displayed, indicating that configuration is now complete. Press the "MODE" key 5 times or keep it pressed for 2 seconds or more to return to "RUN" mode.
3. The performance you are looking for should be: As the LED moves into the registration mark from the background area the Operation Indicator (orange light) will activate (ON), and then deactivate (OFF) when moved back into the material background area, all the while the green light (Stability Indicator) will remain lit. If you have the "L-off" selected on the operation selection the operation of the orange Operation Indicator will be opposite.
4. Additional information regarding advanced programming and operation of the sensor can be found in TSB: FX301 Settings Web Site Copy / CD Copy on the Allen Datagraph web site technical support page at http://allendatagraph.com.

Error Codes

```
Both cut limit switches closed.       // E001
Gear Limit switch not found.          // E002
Gear Limit found expecting operator.  // E003
Operator Limit Switch not found.      // E004
Operator Limit found expecting gear.  // E005
Target not found during scan.         // E006
Label move < 0                        // E007
```