APPLICATION SOLUTION PAXC #01

CUT TO LENGTH TAPE AND LABEL ROLL APPLICATION

A tape and label company needs a method of cutting to length material on a roll to the nearest hundredth of an inch. Since the machine moves from roll to roll very quickly, the machine must enter a "reduced speed" mode five inches before the cut. Additionally, management would like to know the total number of inches of material ran.

PRODUCTS USED: PAXC0000, PAXCDS30, ZFH0500C, WF100OF, LSAHC001

For this operation, 1/8 Din PAXC preset counter is selected with the PAXCDS30 NPN setpoint option card. Also, selected is a ZFH0500C length sensor, fitted with a WF1000OF one-foot circumference wheel and LSAHC001 hinge clamp.

HOW IT WORKS

When the counter reaches preset 1 value, output 1 will latch sending a slow down signal. When preset 2 value is obtained, a timed output 2 will signal the cutter to cut, the counter will auto reset and output 1 will turn off. For various size rolls, the PAXC counter can be programmed to allow easy operator access to preset 2 cut value. Preset 1 value (reduce speed) can be programmed to auto track preset 2, by five inches less, eliminating the need for the operator to change it.

To scale the counter to display inches to the nearest 1/100, there needs to be at least 100 pulses per inch. With the ZFH0500C, there are 500 pulses per revolution. Using the one-foot WF1000OF wheel, there is 500 per twelve inches or 41.67 pulses per one inch. With the PAXC programmed for quadx4, 41.67 pulses per inch is four times greater or 166.68 pulses per inch. The scale factor, to be entered into the counter for inches, is then determined by dividing 166.68 into 100 (because the accuracy is to 1/100). This value (rounded up) is 0.6000.

The PAXC counter has another count register (Counter C), which can be programmed to follow the main Counter A. This Counter C can totalize the running number of inches and can be reset with the RST button.

DESIGN ADVANTAGES

The PAXC counter eliminated the number for two separate meters, a cut to length counter and running totalizer. The quad length sensor allowed accuracy to a 1/100 of an inch with forward and backward counts. The NPN output cards not only offer quick respond time, but also had improved life over the mechanical relay counter outputs. With the PAXC, the manufacturer saw an increase in productivity, reliability and accuracy

ADDITIONAL CAPABILITIES

The PAXC has a third totalizer (Counter B), which could be programmed for counting the number of rolls or labels. With the PAXCDS30, there are two additional outputs that could be used to signal after a certain total of rolls, labels or inches.

DIP SWITCH OR JUMPER SETTINGS

All are at factory settings.

PROGRAMMING (Only nonfactory settings shown)

1-INP
A CNt : QuAd4
AdECPt : 0.00
ASCFAC : 0.60000

2-FNC
Usr-1 : PLOC

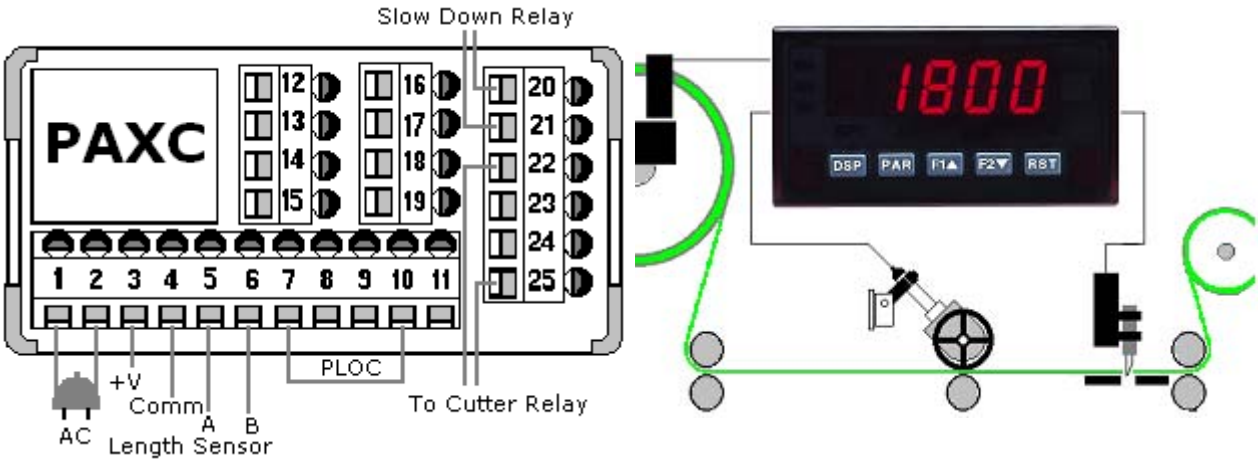
3-LOC
C CNt : REd
SP-2 : ENt (enter SP2 in lock)
ASFAC : LOC

5-CtrC
C CNt : A
CdEPt : 0.00
CSCFAC : 0.60000

6-SPt
SPSEL : SP-2
Act-2 : tOUt
SP-2 : (roll length)
tOUt-2 : 1.00 (cut time)
AutO-2 : ZErOAE (auto reset)
SPSEL : SP-1
Act-1 : LatCH
SP-1 : (5 inches less than SP-2)
TrC-1 : SP-2 (track SP2)
RSd-1 : YES (reset with display)

WIRING DIAGRAM

All wiring must be according to the installation guidelines listed in the product's specifications. For the setpoint outputs to function an external isolated voltage source (not shown below) must be connected in series.



This application note is intended to be an example. Your specific application may require changes in products, programming and/or wiring. For specific assistance, you may contact your local Red Lion products supplier or Red Lion Controls Technical Support at 717-767-6511.