APPLICATION SOLUTION LGPB #01

BATCH COUNTING WITH CUSTOM DISPLAYS & ERROR MESSAGES APPLICATION

A large bottling company wanted to upgrade several of their production lines. One particular line packs bottles into cases of 24 before being wrapped. The machine then kicks out the full case and replaces it with an empty one.

PRODUCT USED: LGPB0200, RRDC0000

The customer originally wanted a counter to energize the wrapper solenoid after every 24 bottles, and another counter to count the number of cases. After being shown the LGPB (Legend Plus Batch) counter he realized he could take care of both counts with just one unit. To derive a signal, a RRDC Photo-Electric Sensor was used.

HOW IT WORKS

The Process counter was programmed to energize Output 1 at Preset 1 (24 bottles in a case), and then automatically reset to zero. The Batch counter automatically increments when this reset occurs. The Total counter keeps track of the running total of bottles. The F2 button was programmed to reset all these counters.

Additionally, the LGPB was programmed to show rate with Presets 2 and 3 assigned to Rate. The outputs were not wired to external devices but were programmed to inform the operator of a Line Jam or Over Speed conditions with preprogrammed messages. Both these messages would change the display from Green to Red and to flash to draw the operator's attention. User input 1 was programmed to clear the displayed error messages from the counter.

To eliminate the possibility of the operator confusing the different values on the LGPB display, the Mnemonics were changed from Process, Batch and Rate to Bottles, Cases and BTL/MIN respectively. The four two line displays of the LGPB were programmed to automatically change through the values of Bottles, Cases, Speed and a split display of Speed with Total together.

DESIGN ADVANTAGES

With the LGPB, the customer got more than just a single counter. He utilized the Batch, Total and the Rate features of the Legend Plus, as well as, the custom displays, mnemonics and messages capability to inform the operator of machine and count status.

ADDITIONAL CAPABILITIES

The LGPB has RS232 and RS485 communications. This means the unit could be programmed with the free Red Lion Controls software RLCPRO. Also with the communications, data from the LGPB could be sent to a printer, data logger, PLC or computer.

PROGRAMMING (Only non-factory settings shown)

PRESETS
P1 24
P2 40
P3 100

SCALE FACTORS
RATE PER MINUTE

OPTIONS-ACCESS
P1 NO
P2 NO
P3 NO
P4 NO
CT LD NO
SF'S NO

COUNTER
P AUTO RS. OUT 1

OUTPUT 1
ASSIGNED PROCESS
TYPE TIMED
TIME 1.00

OUTPUT 2
ASSIGNED RATE
TYPE BOUNDARY
ACT LO
REQ MSG# 2

OUTPUT 3
ASSIGNED RATE
TYPE BOUNDARY
ACT HI
REQ MSG# 1

USER INPUTS
USER INP 1 CLR MSG
USER F1 MOM RST
RATE- NO
PRC- YES
BATCH- NO
TOTAL- NO

USER F2 MOM RST
RATE- NO
PRC- YES
BATCH- YES
TOTAL- YES

DISPLAY 1
D1 LINE 1 PRC-MNE
D1 LINE 2 PRC-VAL
D1 COLOR GREEN

DISPLAY 2
D2 LINE 1 RATE-MNE
D2 LINE 2 RATE-VAL
D2 COLOR GREEN

DISPLAY 3
D3 LINE 1 BAT-MNE
D3 LINE 2 BAT-VAL
D COLOR GREEN

DISPLAY 4
D4 LINE 1 CUSTDSP1
D4 LINE 2 TOT-VAL
D4 COLOR GREEN

SCRO. SPD 2.5 SEC
DSP LEVEL G 4 R 5

CUST. DSP
CUST. DSP 1 BPM
CUST. DSP 2 --------

MNEMONICS
RATE BTL/MIN
PROCESS BOTTLES
BATCH CASES

MESSAGES
MSG. # 2
TYPE 2L BLOCK
TEXT LINE *(F1+ENT)*
JAMMED
PRIORITY 1
BLINKING YES
MOM REQ MOM
COLOR RED

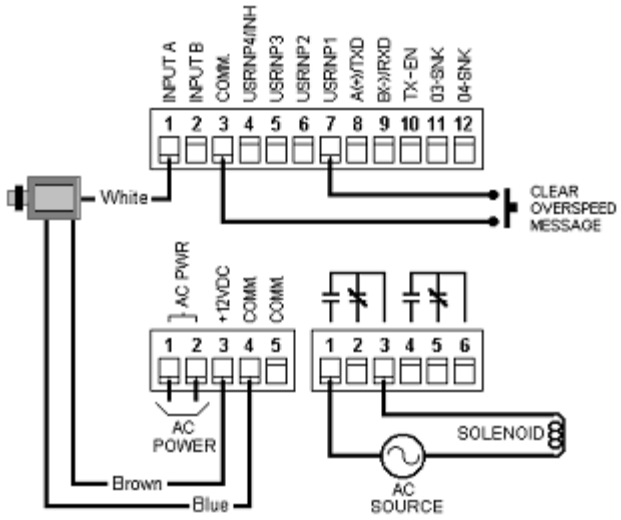
MSG. # 1
TYPE 2L BLOCK
TEXT OVER *(F1+ENT)*
SPEED
PRIORITY 1
BLINKING YES
MOM REQ MOM
COLOR RED

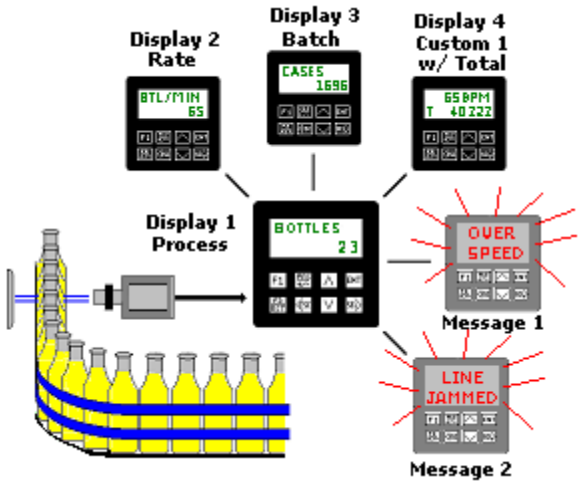
DIP SWITCH OR JUMPER SETTINGS

After programming place 7 up for program lock.

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.