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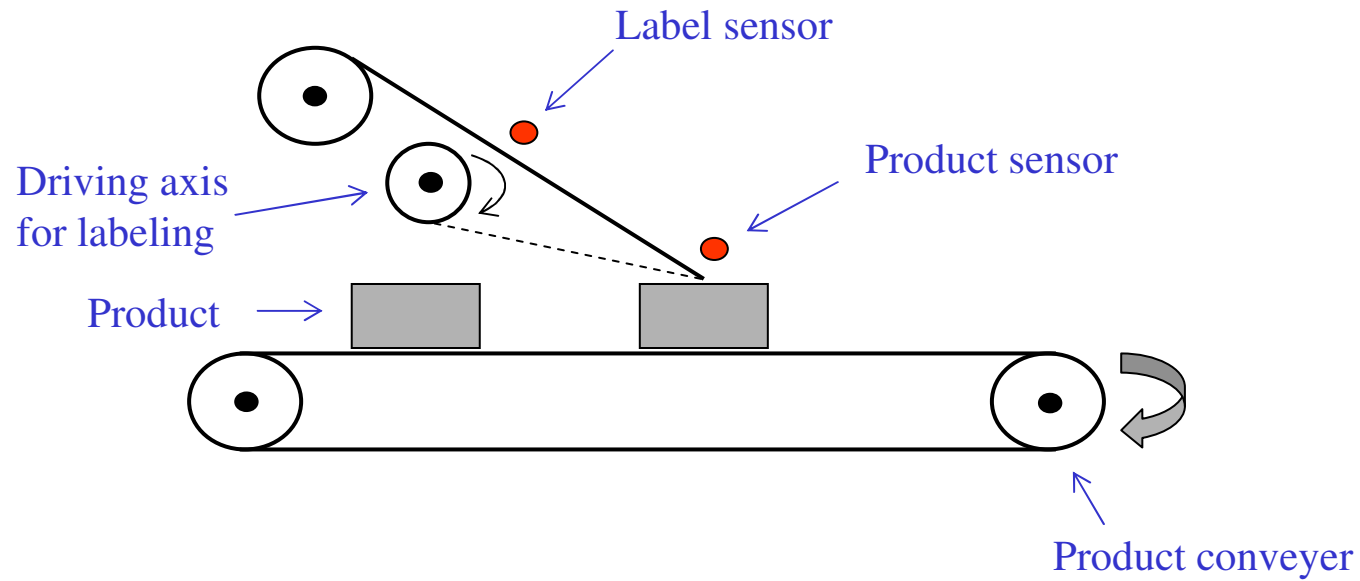
DVP PLC _ Labeling Machine Application

2011/03/29



Labeling Machine Application

➤ Device Operation Structure





Labeling Machine Application

➤ Electronic Devices and PLC I/O

- Main conveyer → Driven by frequency inverter
- Driving axis for labeling → Driven by stepping drive and stepping motor
- PLC Y0 output → connected to → Pulse input of stepping drive
- PLC X0 input → connected to → Product sensor
- PLC X4 output → connected to → Label sensor

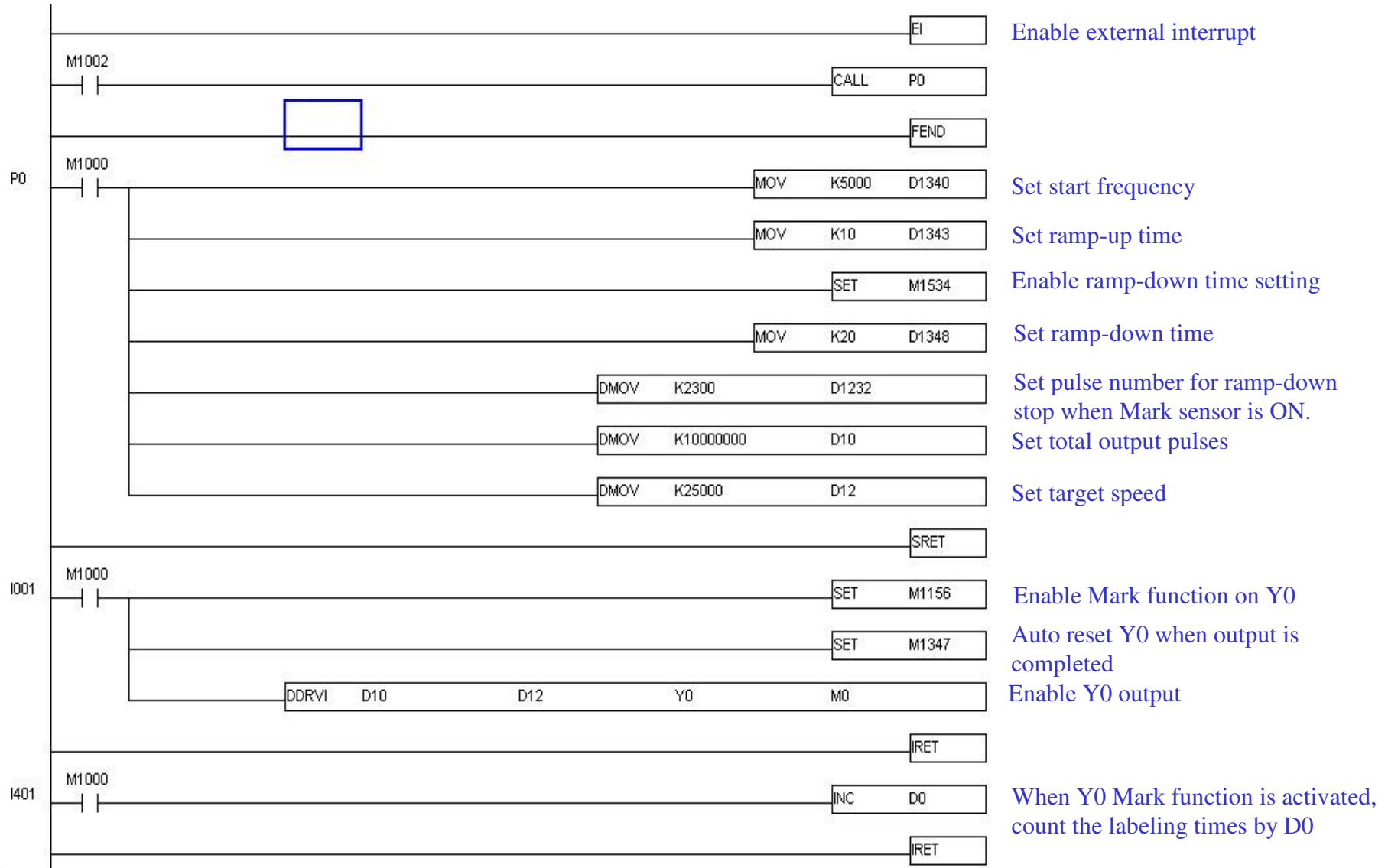
➤ Operation Steps

- Step 1 → Execute the inverter to move the conveyer for feeding products.
- Step 2 → Wait for next step until the product sensor X0 is triggered.
- Step 3 → Y0 outputs to stepping drive and stamps the label on the product.
- Step 4 → Wait for the triggering of label sensor. When triggered, output specified number of pulses and stop. Go back to step 2.



Labeling Machine Application

➤ Program Example





Labeling Machine Application

➤ Key Techniques:

- Conveyor speed affects the target labeling speed. Improper setting will cause bad stamping quality.
- Start frequency and ramp-up time setting of stepping drive affects the label position on product, e.g. when ramp-up time is 10ms, start freq. should be $\geq 2\text{kHz}$ otherwise the ramp-up time can not be achieved.
- Interval between product sensor ON and PLC output should be accurate and fixed.
- Interval between label sensor ON and ramp-down stop should be accurate.
- PLC should support ramp-down stop pulses setting. The pulse number will affect the start position of next label.

➤ PLC Models for This Function

- ES2/EX2 → V1.5 or above. For V1.5 below, DDRVI should be placed in main program
- SX2 → V1.1 or above. For V1.1 below, DDRVI should be placed in main program.
- SA2 → V0.8 or above.



Thank You

