

# **CUSTOM DWM-IV SUPPLEMENT**

JOB # 30673D

**FlexWeigh**

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## **General**

This specially programmed DWM-IV provides logical relay control for gating, weighing, and diverting (if necessary) totes on a conveyor line, based on inputs from a host computer, and infeed, scale and outfeed photobeams.

Photobeam conditions and input from the host determine automatic scale operation. The host computer can monitor the weight at all times. When a tote passes through the infeed photobeam, a checkweigh cycle starts. First, a gate is raised to prevent the next tote from advancing. Next the scale photobeam is broken and the tote is lifted off the conveyor for weighing. If the host determines that the weight is correct, it sends an accept command and the DWM-IV lowers the tote and the gate to allow the next tote to approach the scale. If the weight was incorrect, the host would have sent a reject command and the DWM-IV would have activated the diverter.

The DWM-IV also monitors two outfeed photobeams. If either of these beams is blocked, the host receives a blocked status when the command is echoed. The host must continue to send commands until the blocked condition is removed.

The DWM-IV can be setup as a reweigh station. In this configuration, the lift output is always actuated and DWM-IV sends weight data on demand.

The revision B release of this program has a debounce on the photobeam detect of 100 milliseconds.

The revision C release of this program sets the U status (not ready) immediately after echoing M (moved) to the host system. Also, supervisory LEDs have been enabled for troubleshooting. LD2 lights during the debounce time, each time the edge of a tote passes through a photobeam. LD3 lights at the top of the control loop whenever the program is waiting for the infeed photobeam to be broken.

**1.0 Setup**

Setup step F2.6 is used to set the controller for checkweigh or reweigh operation.

F2.6 Reweigh Enable

- d Controller is set for automatic checkweigh and relay control.
- E Controller is set for stand alone Reweigh operation.

**1.1 I/O Map**

INFEED PHOTOBEAM	PEC1	TB1:6	NO
SCALE PHOTOBEAM	PEC2	TB1:8	NO
OUTFEED PHOTOBEAM	PEC3,4	TB1:10	NC in series
GATE	K1		
RAISE TOTE	K2		
DIVERT REJECT	K8		
HOST COMMUNICATION	CH2	TB1:2,5,8	Bidirectional pcb

**2.0 Consecutive Number Entry**

Enter the consecutive number per the instructions in the DWMIV Operator Manual.

<u>KEY</u>	<u>DISPLAY RESPONSE</u>		
SELECT	"	"	
8	"8.	"	
ENTER	"	23"	Displays current consecutive number.
5	"	5"	
0	"	50"	
ENTER			ENTER key completes entry of the consecutive number. Display reverts to normal weight display.

**2.1 Disabled Features**

Preset, Dribble, and Preact functions have been disabled since these functions drive the relay outputs which are now determined by the photobeam input conditions and commands from the host computer.

**3.0 Sequence of Operation**

1. Totes are at the indexing gate. When a tote moves onto the scale (fast conveyor) it passes through the infeed photobeam, triggering the DWM-IV to raise the gate, halting the next tote.
2. The tote breaks the scale photobeam and triggers the DWM-IV to lift the tote off the conveyor for weighing. The host computer can sample the weight on the DWM-IV at any time. The request command is as follows:

Ctrl-S (HEX 13)

3. The DWM-IV responds with an ASCII text string of the consecutive number, the weight, and a weight status of 'U' for unstable (or any invalid condition like overcapacity) or 'S' for stable or ready. The format is as follows:

<STX>NNNNNNWWWW.WWS<ETX  
 or<STX>NNNNNNWWWW.WWU<ETX .

4. The host determines if the weight is correct and sends an ACCEPT or REJECT:

A (HEX 41) or R (HEX 52)

5. The DWM-IV monitors the outfeed photobeams. If either beam is blocked the ACCEPT or REJECT commands are echoed with a 'B' for the blocked condition or an 'M' to indicate the tote is moved.

<STX>AB<ETXand<STX>RB<ETX  
 or<STX>AM<ETX and <STX>RM<ETX.

6. If the outfeed photobeams are not blocked, The DWM-IV lowers the tote, and the indexing gate, allowing the "just weighed" tote to move off the scale and the next tote to break the incoming photobeam and restart the cycle.
7. If the outfeed beams were blocked, the host must continue to send commands to the DWM-IV to determine that the tote is moved. The DWM-IV holds the tote on the scale until that command is received.
8. If it becomes necessary to clear all the output relays off (lower the gate, and scale, and turn the diverter off), the operator can reset the system from the F1 key on the front panel. The DWM-IV prompts "rESEt?", and the operator can continue by pressing ENTER. The DWM-IV then prompts "donE", and returns to weight display.

9. The host system can also initiate a reset by sending the following command:

Ctrl-X (HEX 18)

The DWM-IV will echo the reset command and the last blocked or moved status character.

<STX>Ctrl-XB<ETX or <STX>Ctrl-XM<ETX

The DWM-IV will also echo this command when the operator presses reset on the front panel.