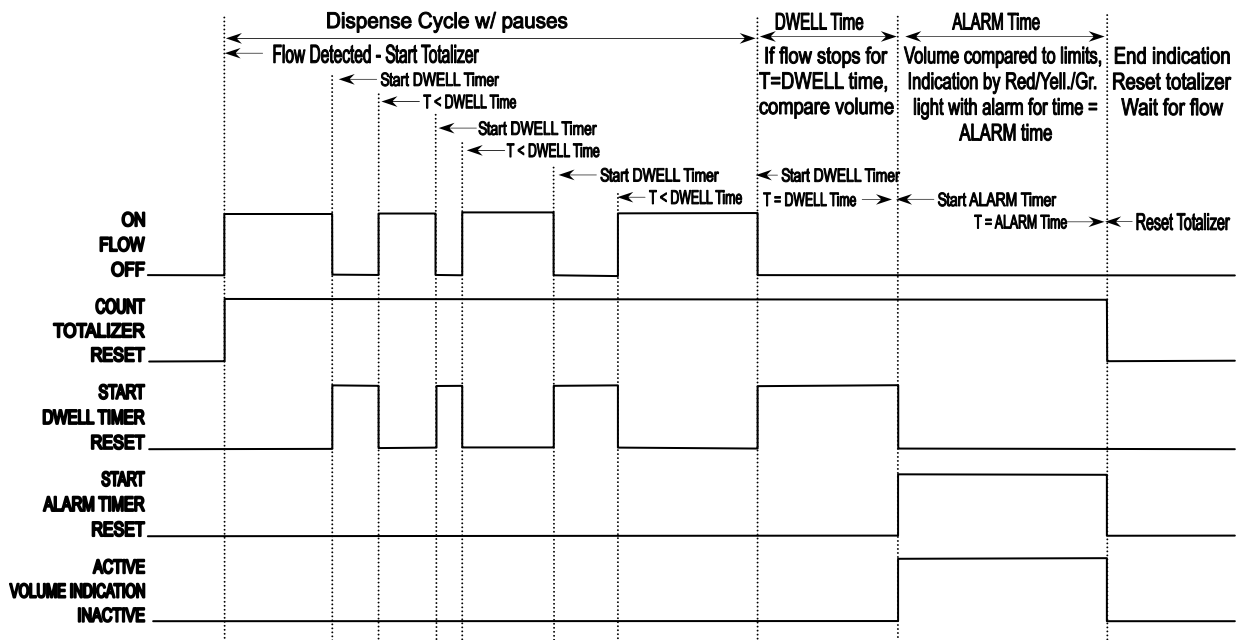


DVV – Dispense Volume Verification System

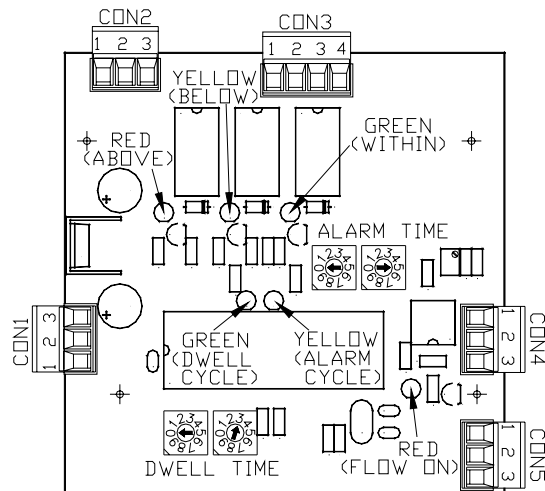
The Dispense Volume Verification system is a fully automatic dispense monitor that compares the dispensed volume to a programmed minimum and maximum volume limit providing a pass or fail indication via a highly visible tower light and audible alarm. The DVV requires only the flow meter signal to operate and does not require any external logic or additional wiring. The DVV senses the start of a dispense cycle by detecting flow and continues to totalize until flow has completely stopped for a user specified time. At this time the total is compared to the programmed limits. The DVV then indicates whether the dispensed volume falls within, below, or above the specified limits with a green, yellow, or red light respectively. An audible alarm will sound for a result outside the limits. After a user specified time, the indicators clear and the system resets and waits for flow to start again. A large, backlighted LCD graphic display provides easy to read indication of the dispensed total or flow rate in user programmable engineering units.

The DVV system is integrated with a standard FEM-03. The FEM-03 manual applies to operation and programming of rate and total scaling factors and the BATCH limits that specify the under-dispense and the over-dispense quantities. Directions on programming the KFR and KFT factors are on pages 13 through 16 of the FEM-03 Users Manual. Use the recommended KFR and KFT values listed on the AW Company Calibration sheet supplied with each meter. Display selection is described on pages 12 and 13 of the FEM-03 Users Manual. Necessary active displays are: LOGO/FEM-03, RATE A PL, TOTAL A, BATCH TOTAL.

The DVV will compare the volume dispensed in a cycle to the TOTAL LIMIT 1 (lowest acceptable dispense) and the TOTAL LIMIT 2 (maximum acceptable dispense). The accumulating dispensed quantity (BATCH TOTAL) and TOTAL LIMITS S1 and S2 are displayed in the BATCH TOTAL display as shown on page 10 of the FEM-03 Users Manual. Directions on programming the limits using the BATCH display are on page 20 of the FEM-03 Users Manual.



A separate board inside the enclosure (DVV board) is used for setting the DWELL TIME (time allowed for hesitations in flow) and the ALARM TIME (time for display of the limits comparison result). The DVV board detects flow and compares any pauses or hesitations in flow to the DWELL TIME setting. If the hesitation exceeds the DWELL time the dispensed total is compared to the FEM-03 programmed limits and the result is displayed with an alarm if necessary for the user-set ALARM TIME.



DWELL TIME allows for the dispense hesitation, that is the time allowed for any pauses in a complete dispense cycle. The DVV determines the start of the dispense cycle by the initiation of flow. The red “Flow On” LED in the lower right hand corner of the DVV board will come on whenever flow is detected. Flow can pause once or several times as long as the pause does not exceed the programmed DWELL TIME. The green DWELL CYCLE LED located near the center of the DVV board will light whenever flow pauses as the DWELL timer is activated. If flow ceases for longer than the programmed DWELL TIME, the DVV determines that the dispense cycle is completed, the yellow “Alarm Cycle” LED located in the center of the DVV board will light and the DVV system will display the results as RED (above limit), GREEN (within limits), AMBER (below limit) on the external stack light in addition to the result LEDs located just above center on the DVV board. Results that are not within limits also trigger an audible alarm. ALARM TIME is the time that the dispense result (light and/or alarm) will be indicated before resetting automatically to wait for flow to begin in the next dispense cycle.

In the illustration, the DWELL TIME switches are depicted indicating 03 seconds and the ALARM TIME switches are depicted indicating 05 seconds. Both switches have been set to 05 seconds as a default. **DO NOT SET EITHER SWITCH TO 00!!**