

ATC or its installation.

- 6) Return the switch on the front display to the upwards position for "normal" display position.

This completes the testing of the ATC. If you encounter any difficulty please contact your service representative.

8.0 - TWO TIER OPTION INSTALLATION

See "MICON 200 Options and Ordering Information" to order the optional connector and pushbutton switch or keyswitch. To install the two tier option, connect the push button switch between the black and purple wires on the provided connector as shown in fig. 4.1. The push button switch can be mounted in a 7/8" hole in the side of the dispenser. An optional keyswitch is available, which can be used instead of, or together with the pushbutton in series.

9.0 - INSTALLATION KITS

Drawings referred to in the following kit installation instructions will be found at the end of this section.

9.1 - TOKHEIM DISPENSERS (DS1 through DS6)

- 1) Remove the existing register and faceplates.
- 2) Install the BC101 conversion shaft into the reset housing as shown in Figure 9.1.
- 3) Remove the MICON 200 faceplates and install the display standoff brackets (BC105) between the MICON 200 faceplates and the register base as shown in Figure 9.2.
- 4) Install the new faceplates supplied with the installation kit (BC115, BC114L & BC114R, or BC114).
- 5) Install the MICON 200 register using the handle link (BC183, or BC176) supplied with the kit.

NOTE : Some Tokheim models use a mechanically controlled valve. To adapt to the MICON 200, this valve must be replaced with a solenoid valve.

9.2 - GILBARCO (DS7 & DS8)

- 1) Remove the existing register and the electric reset housing from the dispenser.
- 2) On the MICON 200 register, remove the existing detent assembly and replace with the BC233 adapter. (The BC233 is similar to the assembly removed but does not have a handle switch coupling).
- 3) On the opposite side of the MICON 200 register, install the BC109

The closest value listed in Table 7.1 is -5.15% which calls for the switch settings:

8 OFF, 7 OFF, 6 OFF, 5 ON, 4 ON, 3 OFF, 2 OFF, 1 ON

- 6) Place switch 10 into the ON position.
- 7) Place the selector switch on the front display board in the ATC (down) position. The dollars display on the front display will now show the meter calibration error which you have programmed into the MICON 200. For the above example the display will show "-5.15". If the value shown is not correct, one or more of the switches was incorrectly set.
- 8) Repeat step 2 above to verify the calibration of the MICON 200.
- 9) Return switch 10 to the OFF position if the MICON 200 is to be used in the automatic temperature compensation mode. When the ATC feature is used, a temperature probe of the proper type must be connected.

If ATC is not going to be used (I.E. calibration only), leave switch 10 in the ON position.
- 10) Replace the cover of the explosion-proof housing and install a suitable (legal) seal through the two adjacent drilled cover bolts to ensure the cover can not be removed without breaking the seal.
- 11) Return the front display selector switch to the NORMAL (upwards) position.

7.2 - AUTOMATIC TEMPERATURE COMPENSATION

In addition to electronic calibration the Automatic Temperature Compensator will compensate the volume of product delivered to the equivalent volume at 15 degrees Celsius. In order to accurately sense the temperature of the product, the probe must be directly immersed into the product as close as possible to the meter. The use of a thermal well is NOT allowed. The following procedure should be used to verify the operation of the ATC:

- 1) Install and connect the temperature probe.
- 2) Place the selector switch located on the front display board in the ATC (downward) position.
- 3) Dispense a convenient volume of product into a test can and record the temperature and volume of the product in the can.
- 4) The volume indicated on the front display of the MICON 200 is the UNCOMPENSATED volume. This volume should agree directly with the volume measured in the test can. If it does not agree, the meter is out of calibration.
- 5) Calculate the compensated volume in the test can using the actual volume and the temperature of the product in the test can and the appropriate correction tables. The calculated compensated volume should agree with the compensated volume shown on the rear display of the MICON 200. If the values do not agree a problem exists in the

SWITCH SETTINGS FOR 100% to +112.75% CALIBRATION ("P" Option)

Switch setting 87654321	Compensation	Switch setting 87654321	Compensation
OC00000C	+3.25%	CC00000C	+9.65%
OC00000C	+3.30%	CC00000C	+9.70%
OC00000C	+3.35%	CC00000C	+9.75%
OC00000C	+3.40%	CC00000C	+9.80%
OC00000C	+3.45%	CC00000C	+9.85%
OC00000C	+3.50%	CC00000C	+9.90%
OC00000C	+3.55%	CC00000C	+9.95%
OC00000C	+3.60%	CC00000C	+10.00%
OC00000C	+3.65%	CC00000C	+10.05%
OC00000C	+3.70%	CC00000C	+10.10%
OC00000C	+3.75%	CC00000C	+10.15%
OC00000C	+3.80%	CC00000C	+10.20%
OC00000C	+3.85%	CC00000C	+10.25%
OC00000C	+3.90%	CC00000C	+10.30%
OC00000C	+3.95%	CC00000C	+10.35%
OC0C0000	+4.00%	CC0C0000	+10.40%
OC0C0000	+4.05%	CC0C0000	+10.45%
OC0C0000	+4.10%	CC0C0000	+10.50%
OC0C0000	+4.15%	CC0C0000	+10.55%
OC0C0000	+4.20%	CC0C0000	+10.60%
OC0C0000	+4.25%	CC0C0000	+10.65%
OC0C0000	+4.30%	CC0C0000	+10.70%
OC0C0000	+4.35%	CC0C0000	+10.75%
OC0C0000	+4.40%	CC0C0000	+10.80%
OC0C0000	+4.45%	CC0C0000	+10.85%
OC0C0000	+4.50%	CC0C0000	+10.90%
OC0C0000	+4.55%	CC0C0000	+10.95%
OC0C0000	+4.60%	CC0C0000	+11.00%
OC0C0000	+4.65%	CC0C0000	+11.05%
OC0C0000	+4.70%	CC0C0000	+11.10%
OC0C0000	+4.75%	CC0C0000	+11.15%
OC0C0000	+4.80%	CC0C0000	+11.20%
OC0C0000	+4.85%	CC0C0000	+11.25%
OC0C0000	+4.90%	CC0C0000	+11.30%
OC0C0000	+4.95%	CC0C0000	+11.35%
OC0C0000	+5.00%	CC0C0000	+11.40%
OC0C0000	+5.05%	CC0C0000	+11.45%
OC0C0000	+5.10%	CC0C0000	+11.50%
OC0C0000	+5.15%	CC0C0000	+11.55%
OC0C0000	+5.20%	CC0C0000	+11.60%
OC0C0000	+5.25%	CC0C0000	+11.65%
OC0C0000	+5.30%	CC0C0000	+11.70%
OC0C0000	+5.35%	CC0C0000	+11.75%
OC0C0000	+5.40%	CC0C0000	+11.80%
OC0C0000	+5.45%	CC0C0000	+11.85%
OC0C0000	+5.50%	CC0C0000	+11.90%
OC0C0000	+5.55%	CC0C0000	+11.95%
OC0C0000	+5.60%	CC0C0000	+12.00%
OC0C0000	+5.65%	CC0C0000	+12.05%
OC0C0000	+5.70%	CC0C0000	+12.10%
OC0C0000	+5.75%	CC0C0000	+12.15%
OC0C0000	+5.80%	CC0C0000	+12.20%
OC0C0000	+5.85%	CC0C0000	+12.25%
OC0C0000	+5.90%	CC0C0000	+12.30%
OC0C0000	+5.95%	CC0C0000	+12.35%
OC0C0000	+6.00%	CC0C0000	+12.40%
OC0C0000	+6.05%	CC0C0000	+12.45%
OC0C0000	+6.10%	CC0C0000	+12.50%
OC0C0000	+6.15%	CC0C0000	+12.55%
OC0C0000	+6.20%	CC0C0000	+12.60%
OC0C0000	+6.25%	CC0C0000	+12.65%
OC0C0000	+6.30%	CC0C0000	+12.70%
OC0C0000	+6.35%	CC0C0000	+12.75%

C / ON

TABLE 7-2

SWITCH SETTINGS FOR 100% to +112.75% CALIBRATION ("P" Option)

Switch setting 87654321	Compensation	Switch setting 87654321	Compensation
00000000	0.00%	C0000000	+6.40%
0000000C	+0.05%	C000000C	+6.45%
0000000C0	+0.10%	C000000C0	+6.50%
0000000CC	+0.15%	C000000CC	+6.55%
0000000C00	+0.20%	C000000C00	+6.60%
0000000C0C	+0.25%	C000000C0C	+6.65%
0000000C0C0	+0.30%	C000000C0C0	+6.70%
0000000C0CC	+0.35%	C000000C0CC	+6.75%
0000000C0C00	+0.40%	C000000C0C00	+6.80%
0000000C0C0C	+0.45%	C000000C0C0C	+6.85%
0000000C0C0C0	+0.50%	C000000C0C0C0	+6.90%
0000000C0C0CC	+0.55%	C000000C0C0CC	+6.95%
0000000C0C0C00	+0.60%	C000000C0C0C00	+7.00%
0000000C0C0C0C	+0.65%	C000000C0C0C0C	+7.05%
0000000C0C0C0C0	+0.70%	C000000C0C0C0C0	+7.10%
0000000C0C0C0CC	+0.75%	C000000C0C0C0CC	+7.15%
0000000C0C0C0C00	+0.80%	C000000C0C0C0C00	+7.20%
0000000C0C0C0C0C	+0.85%	C000000C0C0C0C0C	+7.25%
0000000C0C0C0C0C0	+0.90%	C000000C0C0C0C0C0	+7.30%
0000000C0C0C0C0CC	+0.95%	C000000C0C0C0C0CC	+7.35%
0000000C0C0C0C0C00	+1.00%	C000000C0C0C0C0C00	+7.40%
0000000C0C0C0C0C0C	+1.05%	C000000C0C0C0C0C0C	+7.45%
0000000C0C0C0C0C0C0	+1.10%	C000000C0C0C0C0C0C0	+7.50%
0000000C0C0C0C0C0CC	+1.15%	C000000C0C0C0C0C0CC	+7.55%
0000000C0C0C0C0C0C00	+1.20%	C000000C0C0C0C0C0C00	+7.60%
0000000C0C0C0C0C0C0C	+1.25%	C000000C0C0C0C0C0C0C	+7.65%
0000000C0C0C0C0C0C0C0	+1.30%	C000000C0C0C0C0C0C0C0	+7.70%
0000000C0C0C0C0C0C0CC	+1.35%	C000000C0C0C0C0C0C0CC	+7.75%
0000000C0C0C0C0C0C0C00	+1.40%	C000000C0C0C0C0C0C0C00	+7.80%
0000000C0C0C0C0C0C0C0C	+1.45%	C000000C0C0C0C0C0C0C0C	+7.85%
0000000C0C0C0C0C0C0C0C0	+1.50%	C000000C0C0C0C0C0C0C0C0	+7.90%
0000000C0C0C0C0C0C0C0CC	+1.55%	C000000C0C0C0C0C0C0C0CC	+7.95%
0000000C0C0C0C0C0C0C0C00	+1.60%	C000000C0C0C0C0C0C0C0C00	+8.00%
0000000C0C0C0C0C0C0C0C0C	+1.65%	C000000C0C0C0C0C0C0C0C0C	+8.05%
0000000C0C0C0C0C0C0C0C0C0	+1.70%	C000000C0C0C0C0C0C0C0C0C0	+8.10%
0000000C0C0C0C0C0C0C0C0CC	+1.75%	C000000C0C0C0C0C0C0C0C0CC	+8.15%
0000000C0C0C0C0C0C0C0C0C00	+1.80%	C000000C0C0C0C0C0C0C0C0C00	+8.20%
0000000C0C0C0C0C0C0C0C0C0C	+1.85%	C000000C0C0C0C0C0C0C0C0C0C	+8.25%
0000000C0C0C0C0C0C0C0C0C0C0	+1.90%	C000000C0C0C0C0C0C0C0C0C0C0	+8.30%
0000000C0C0C0C0C0C0C0C0C0CC	+1.95%	C000000C0C0C0C0C0C0C0C0C0CC	+8.35%
0000000C0C0C0C0C0C0C0C0C0C00	+2.00%	C000000C0C0C0C0C0C0C0C0C0C00	+8.40%
0000000C0C0C0C0C0C0C0C0C0C0C	+2.05%	C000000C0C0C0C0C0C0C0C0C0C0C	+8.45%
0000000C0C0C0C0C0C0C0C0C0C0C0	+2.10%	C000000C0C0C0C0C0C0C0C0C0C0C0	+8.50%
0000000C0C0C0C0C0C0C0C0C0C0CC	+2.15%	C000000C0C0C0C0C0C0C0C0C0C0CC	+8.55%
0000000C0C0C0C0C0C0C0C0C0C0C00	+2.20%	C000000C0C0C0C0C0C0C0C0C0C0C00	+8.60%
0000000C0C0C0C0C0C0C0C0C0C0C0C	+2.25%	C000000C0C0C0C0C0C0C0C0C0C0C0C	+8.65%
0000000C0C0C0C0C0C0C0C0C0C0CC	+2.30%	C000000C0C0C0C0C0C0C0C0C0C0CC	+8.70%
0000000C0C0C0C0C0C0C0C0C0C0C0C0	+2.35%	C000000C0C0C0C0C0C0C0C0C0C0C0C0	+8.75%
0000000C0C0C0C0C0C0C0C0C0C0CC0	+2.40%	C000000C0C0C0C0C0C0C0C0C0C0CC0	+8.80%
0000000C0C0C0C0C0C0C0C0C0C0CC0C	+2.45%	C000000C0C0C0C0C0C0C0C0C0C0C0C	+8.85%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0	+2.50%	C000000C0C0C0C0C0C0C0C0C0C0C0C0	+8.90%
0000000C0C0C0C0C0C0C0C0C0C0CC0CC	+2.55%	C000000C0C0C0C0C0C0C0C0C0C0C0CC	+8.95%
0000000C0C0C0C0C0C0C0C0C0C0CC0C00	+2.60%	C000000C0C0C0C0C0C0C0C0C0C0C0C00	+9.00%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C	+2.65%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C	+9.05%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0	+2.70%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0	+9.10%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C	+2.75%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C	+9.15%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0CC	+2.80%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0CC	+9.20%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0	+2.85%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0	+9.25%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C	+2.90%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C	+9.30%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0	+2.95%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0	+9.35%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0C	+3.00%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C	+9.40%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0CC	+3.05%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0CC	+9.45%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0C0	+3.10%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0	+9.50%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0C0C	+3.15%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C	+9.55%
0000000C0C0C0C0C0C0C0C0C0C0CC0C0C0C0C0C0CC	+3.20%	C000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0CC	+9.60%

SWITCH SETTINGS FOR 100% CENTER POINT CALIBRATION ("Z" Option)

Switch setting 87654321 Compensation Switch setting 87654321 Compensation

OC00000C	-3.15%	CC00000C	+3.25%
OC0000C0	-3.10%	CC0000C0	+3.30%
OC0000CC	-3.05%	CC0000CC	+3.35%
OC0000C00	-3.00%	CC0000C00	+3.40%
OC0000C0C	-2.95%	CC0000C0C	+3.45%
OC0000CC0	-2.90%	CC0000CC0	+3.50%
OC0000CCC	-2.85%	CC0000CCC	+3.55%
OC0000C000	-2.80%	CC0000C000	+3.60%
OC0000C00C	-2.75%	CC0000C00C	+3.65%
OC0000C0C0	-2.70%	CC0000C0C0	+3.70%
OC0000C0CC	-2.65%	CC0000C0CC	+3.75%
OC0000CC00	-2.60%	CC0000CC00	+3.80%
OC0000CC0C	-2.55%	CC0000CC0C	+3.85%
OC0000CCCC	-2.50%	CC0000CCCC	+3.90%
OC0000CCCC	-2.45%	CC0000CCCC	+3.95%
OC0C0000	-2.40%	CC0C0000	+4.00%
OC0C000C	-2.35%	CC0C000C	+4.05%
OC0C000C0	-2.30%	CC0C000C0	+4.10%
OC0C000CC	-2.25%	CC0C000CC	+4.15%
OC0C000C00	-2.20%	CC0C000C00	+4.20%
OC0C000C0C	-2.15%	CC0C000C0C	+4.25%
OC0C000CC0	-2.10%	CC0C000CC0	+4.30%
OC0C000CCC	-2.05%	CC0C000CCC	+4.35%
OC0C000C000	-2.00%	CC0C000C000	+4.40%
OC0C000C0C0	-1.95%	CC0C000C0C0	+4.45%
OC0C000C0C0	-1.90%	CC0C000C0C0	+4.50%
OC0C000CCC	-1.85%	CC0C000CCC	+4.55%
OC0C000C000	-1.80%	CC0C000C000	+4.60%
OC0C000C0C0	-1.75%	CC0C000C0C0	+4.65%
OC0C000CCC0	-1.70%	CC0C000CCC0	+4.70%
OC0C000CCCC	-1.65%	CC0C000CCCC	+4.75%
OC0C000C0000	-1.60%	CC0C000C0000	+4.80%
OC0C000C000C	-1.55%	CC0C000C000C	+4.85%
OC0C000C000C0	-1.50%	CC0C000C000C0	+4.90%
OC0C000C000CC	-1.45%	CC0C000C000CC	+4.95%
OC0C000C000C0	-1.40%	CC0C000C000C0	+5.00%
OC0C000C000C0C	-1.35%	CC0C000C000C0C	+5.05%
OC0C000C000CC0	-1.30%	CC0C000C000CC0	+5.10%
OC0C000C000CCC	-1.25%	CC0C000C000CCC	+5.15%
OC0C000C000C000	-1.20%	CC0C000C000C000	+5.20%
OC0C000C000C0C0	-1.15%	CC0C000C000C0C0	+5.25%
OC0C000C000CC0	-1.10%	CC0C000C000CC0	+5.30%
OC0C000C000CCC	-1.05%	CC0C000C000CCC	+5.35%
OC0C000C000C0000	-1.00%	CC0C000C000C0000	+5.40%
OC0C000C000C000C	-0.95%	CC0C000C000C000C	+5.45%
OC0C000C000C000C0	-0.90%	CC0C000C000C000C0	+5.50%
OC0C000C000C000CC	-0.85%	CC0C000C000C000CC	+5.55%
OC0C000C000C000C000	-0.80%	CC0C000C000C000C000	+5.60%
OC0C000C000C000C000C	-0.75%	CC0C000C000C000C000C	+5.65%
OC0C000C000C000C000C0	-0.70%	CC0C000C000C000C000C0	+5.70%
OC0C000C000C000C000CC	-0.65%	CC0C000C000C000C000CC	+5.75%
OC0C000C000C000C000C000	-0.60%	CC0C000C000C000C000C000	+5.80%
OC0C000C000C000C000C000C	-0.55%	CC0C000C000C000C000C000C	+5.85%
OC0C000C000C000C000C000C0	-0.50%	CC0C000C000C000C000C000C0	+5.90%
OC0C000C000C000C000C000CC	-0.45%	CC0C000C000C000C000C000CC	+5.95%
OC0C000C000C000C000C000C000	-0.40%	CC0C000C000C000C000C000C000	+6.00%
OC0C000C000C000C000C000C000C	-0.35%	CC0C000C000C000C000C000C000C	+6.05%
OC0C000C000C000C000C000C000C0	-0.30%	CC0C000C000C000C000C000C000C0	+6.10%
OC0C000C000C000C000C000C000CC	-0.25%	CC0C000C000C000C000C000C000CC	+6.15%
OC0C000C000C000C000C000C000C000	-0.20%	CC0C000C000C000C000C000C000C000	+6.20%
OC0C000C000C000C000C000C000C000C	-0.15%	CC0C000C000C000C000C000C000C000C	+6.25%
OC0C000C000C000C000C000C000C000C0	-0.10%	CC0C000C000C000C000C000C000C000C0	+6.30%
OC0C000C000C000C000C000C000C000CC	-0.05%	CC0C000C000C000C000C000C000C000CC	+6.35%

#10 - ON
WRITE FACTOR
REINFORCE WHERE
"Z" OPTION OR
P OPTION

245

- 245

- 6.70
- 2.65
- 2.75

- 6.70
+ 8.95
- 2.75

ON
C

TABLE 7.1

SWITCH SETTINGS FOR 100% CENTER POINT CALIBRATION ("Z" Option)

Switch setting 87654321	Compensation	Switch setting 87654321	Compensation
00000000	-6.40%	C0000000	0.00%
0000000C	-6.35%	C000000C	+0.05%
000000C0	-6.30%	C00000C0	+0.10%
000000CC	-6.25%	C00000CC	+0.15%
00000C00	-6.20%	C0000C00	+0.20%
00000C0C	-6.15%	C0000C0C	+0.25%
00000C00	-6.10%	C0000C00	+0.30%
00000C0C	-6.05%	C0000C0C	+0.35%
00000C00	-6.00%	C0000C00	+0.40%
00000C0C	-5.95%	C0000C0C	+0.45%
0000C0C0	-5.90%	C000C0C0	+0.50%
0000C0CC	-5.85%	C000C0CC	+0.55%
0000C000	-5.80%	C000C000	+0.60%
0000C0C0	-5.75%	C000C0C0	+0.65%
0000C0C0	-5.70%	C000C0C0	+0.70%
0000C0CC	-5.65%	C000C0CC	+0.75%
0000C000	-5.60%	C000C000	+0.80%
0000C00C	-5.55%	C000C00C	+0.85%
0000C00C	-5.50%	C000C00C	+0.90%
0000C00C	-5.45%	C000C00C	+0.95%
0000C0C0	-5.40%	C000C0C0	+1.00%
0000C0C0	-5.35%	C000C0C0	+1.05%
0000C0C0	-5.30%	C000C0C0	+1.10%
0000C0C0	-5.25%	C000C0C0	+1.15%
0000C0C0	-5.20%	C000C0C0	+1.20%
0000C00C	-5.15%	C000C00C	+1.25%
0000C0C0	-5.10%	C000C0C0	+1.30%
0000C0CC	-5.05%	C000C0CC	+1.35%
0000C000	-5.00%	C000C000	+1.40%
0000C00C	-4.95%	C000C00C	+1.45%
0000C0C0	-4.90%	C000C0C0	+1.50%
0000C0CC	-4.85%	C000C0CC	+1.55%
00C00000	-4.80%	C0C00000	+1.60%
00C0000C	-4.75%	C0C0000C	+1.65%
00C00000	-4.70%	C0C00000	+1.70%
00C000CC	-4.65%	C0C000CC	+1.75%
00C000C0	-4.60%	C0C000C0	+1.80%
00C000C0	-4.55%	C0C000C0	+1.85%
00C000C0	-4.50%	C0C000C0	+1.90%
00C000CC	-4.45%	C0C000CC	+1.95%
00C0C000	-4.40%	C0C0C000	+2.00%
00C0C00C	-4.35%	C0C0C00C	+2.05%
00C0C0C0	-4.30%	C0C0C0C0	+2.10%
00C0C0CC	-4.25%	C0C0C0CC	+2.15%
00C0CC00	-4.20%	C0C0CC00	+2.20%
00C0CC0C	-4.15%	C0C0CC0C	+2.25%
00C0CC00	-4.10%	C0C0CC00	+2.30%
00C0CC0C	-4.05%	C0C0CC0C	+2.35%
00C00000	-4.00%	C0CC0000	+2.40%
00C0000C	-3.95%	C0CC000C	+2.45%
00CC00C0	-3.90%	C0CC00C0	+2.50%
00CC00CC	-3.85%	C0CC00CC	+2.55%
00CC0C00	-3.80%	C0CC0C00	+2.60%
00CC0C0C	-3.75%	C0CC0C0C	+2.65%
00CC0C00	-3.70%	C0CC0C00	+2.70%
00CC0CCC	-3.65%	C0CC0CCC	+2.75%
00CC0000	-3.60%	C0CC0000	+2.80%
00CC000C	-3.55%	C0CC000C	+2.85%
00CC0C00	-3.50%	C0CC0C00	+2.90%
00CC00CC	-3.45%	C0CC00CC	+2.95%
00CCCC00	-3.40%	C0CCCC00	+3.00%
00CCCC0C	-3.35%	C0CCCC0C	+3.05%
00CCCC00	-3.30%	C0CCCC00	+3.10%
00CCCC0C	-3.25%	C0CCCC0C	+3.15%
0C000000	-3.20%	CC000000	+3.20%

C

-5.95

If electronic calibration is required, the following method may be used to calibrate the system:

- 1) Remove the cover from the housing and place switch #10 on the ATC board in the ON position. Ensure all other switches are set for 0% calibration (factory setting -see tables in this section or observe calibration reading on display).
- 2) Place the handle switch in the ON position and observe that the MICON 200 dollars and volume displays reset to zero.
- 3) Dispense a known volume of product and record the reading on the volume display.
- 4) Use the formula below to calculate the percentage correction required:

$$\% \text{ CORRECTION} = \frac{(\text{ACTUAL VOLUME} - \text{REGISTER VOLUME})}{\text{REGISTER VOLUME}} \times 100$$
- 5) Refer to Table 7.1 on the next page for the closest correction value and set switches 1 through 8 as shown in the table.

Example: Product dispensed 25.00 Litres
 Register reading 26.360 Litres

$$\% \text{ CORRECTION} = \frac{(25.000 - 26.360)}{26.360} \times 100 = -5.159\%$$

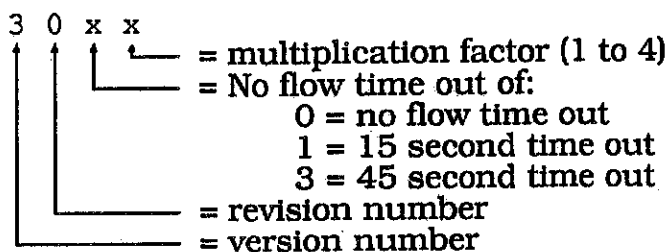
Handwritten calculations:
 $\frac{25.000 - 26.360}{26.360} = -0.05159$
 $\times 100 = -5.159\%$
 7.8

switches located within the explosion-proof housing. These switches are factory set for 0% calibration error. If the meter is correctly calibrated, no further adjustment is necessary.

When the switch on the front display is in the up, or "ATC" position, The ATC readings are shown on the display. The display then indicates as follows:

TOP DISPLAY	% calibration (While sw 10 "on") temperature (While sw 10 "off")
CENTER DISPLAY	uncompensated vol.
BOTTOM DISPLAY	flow rate/status

for the first 5 seconds after reset a software ID message will be displayed on the bottom display as follows:



After the first 5 seconds after reset and until/unless FLOW BEGINS or a shut down error occurs, the product compensation type will be displayed for one of the following products:

- GAS = gasoline
- ProP = propane
- dEs1 = diesel fuel

If normal flow begins, the flow rate display will be displayed continuously until/unless an error occurs. If a pump shut down occurs, the reason code will replace the above message with one of:

- bAd = temperature probe defect (valid only if ATC on)
- FLO = If shut down due to no flow time out
- Err = If pulser error caused shut down

Kraus Group Inc.

25 Paquin Road, Winnipeg, Manitoba, Canada, R2J 3V9

Telephone: 1 204 988 1234 Facsimile: 1 204 654 2881

Printed in Canada

○

○

○

TABLE OF CONTENTS

	PAGE
1.0 INTRODUCTION.....	1
2.0 KEY FUNCTIONS.....	2
2.1 POWER ON.....	2
2.2 AUTOMATIC SHUT-OFF.....	3
2.3 SERVICE AND PRODUCT SUPPORT – CANADA.....	3
2.4 SET-UP MODES.....	4
3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS.....	5
3.1 CONFIG.....	6
3.2 TEST.....	6
3.3 PULSER.....	6
3.4 IN COUNT.....	7
3.5 MULTIPLIER.....	7
3.6 VOL DISP.....	8
3.7 SUPPRESS (for retail applications).....	8
3.8 CONV.....	8
3.9 PRC RESTORE (for retail applications).....	9
3.10 NO FLOW.....	9
3.11 VOL P. QUAD.....	10
3.12 VOL PPU.....	10
3.13 VOL PW.....	11
3.14 DYE PPU.....	11
3.15 DYE PW.....	11
3.16 W/M STANDARD.....	12
3.17 CLEAR ZEROS (for retail applications).....	12
3.18 CONSOLE.....	12
3.19 PUMP ID.....	13
3.20 DISPLAY.....	13
3.21 START KEY.....	14
3.22 ATC.....	14
3.23 COMP TEMP.....	14
3.24 STOP KEY.....	14
3.25 SLOW FLOW.....	15
3.26 MUX KEY.....	15
3.27 C. FACTOR.....	16
3.28 PRODUCT.....	18
3.29 METER.....	19
3.30 TRANSMIT.....	19
3.31 RX MICON.....	21
TABLE 1 – SUMMARY OF DEFAULT SETTINGS.....	5
TABLE 2 – CONVERSION SETTINGS.....	9
TABLE 3 – NO FLOW SETTINGS.....	10

(

(

(



IMPORTANT
REMINDER

Whenever programming with the INFO-PAC, all parameters are rewritten in the Micon 500M.

Before transmitting settings from the INFO-PAC to the Micon 500M electronic pumphead, scroll carefully through all options displayed on the INFO-PAC, and ensure that each and every one is still on the desired setting, **EVEN IF YOU HAVE CHANGED ONLY A SINGLE SETTING.**



IMPORTANT
REMINDER

© Copyright 1998 Kraus Group
All rights reserved.

Kraus Group Inc. and its associates assume no liability or responsibility whatsoever pertaining to the accuracy or currency of the information supplied in this manual. Programming of MICON electronic pumpheads in every case is the sole responsibility of the installer performing the work. Kraus Group Inc. assumes no liability or responsibility whatsoever resulting from any type of programming or installation, whether performed properly, improperly or in any other way.

C

C

C

1.0 INTRODUCTION

The MICON 500M BMS INFO-PAC (version 1.6) is a hand-held, self-contained battery powered unit designed to monitor and configure MICON electronic pumpheads used in bulk meter systems.

There are three types of bulk meter systems:

- **Multiplexed BMS** multiplexes up to 8 meters to one MICON 500M computerized pumphead mounted in a pedestal cabinet.
- **Master/Slave – Multiplexed BMS** multiplexes up to 8 meters to two MICON 500M computerized pumpheads mounted in a pedestal cabinet, permitting register of two fills, from separately metered lines, simultaneously.
- **Single Product BMS** registers input from a single meter to one MICON 500M computerized pumphead mounted in a pedestal or rack meter cabinet.

The standard Multiplexed and Master/Slave Multiplexed systems can each retain gross/net price and volume totals for from 1 to 8 fuel products. The Single Product BMS retains totals for 1 fuel product.

Regardless of the system used, temperature compensation is available for the following fuel products:

1. gasoline
2. diesel
3. propane
4. butane
5. aviation gas
6. jet a
7. jet b
8. NH₃ (anhydrous ammonia)
9. ethanol

No compensation option ("no comp") is available for other liquid fuel products.

The BMS INFO-PAC is a *transmitter* and *receiver*. Programmable pumphead features such as the fuel product selections listed above can be set up in the INFO-PAC memory, then transmitted to MICON heads. The BMS INFO-PAC also receives and displays features already programmed to MICON pumpheads.

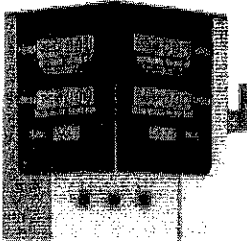
Setting configuration features in the MICON using the BMS INFO-PAC requires breaking of two *Weights & Measures* seals on the MICON cover. See section 3.30 – Transmit, page 19.

C

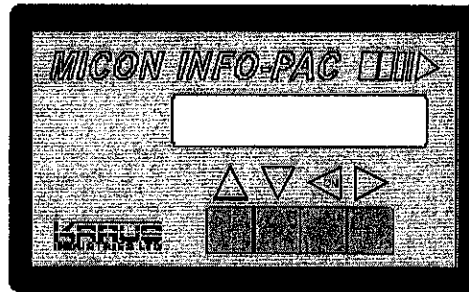
C

C

1.0 KEY FUNCTIONS



MICON 500M PUMP COMPUTER
LOCATED IN BMS PEDESTAL




BMS INFO-PAC

- △ This key is used to scroll upwards through the menu options.
- ▽ This key is used to scroll downwards through the menu options.
- ◀ ON This key is used to turn the BMS INFO-PAC **ON**, to scroll forward through the data items associated with each menu option, and to change digit values.
- ▶ This key is used to scroll backward through the data items associated with each menu option or to select digits to be incremented.

2.1 POWER ON

The BMS INFO-PAC is powered by a 9 volt battery.

1. Press  key to power unit **ON**. LCD momentarily displays BMS INFO-PAC model and Software version number:

M500-BMS I.P. 1.6

C

C

C

2.1 POWER ON (cont'd), 2.2, 2.3

2. The display changes to show one of the following:

CONFIG default

CONFIG custom

2.2 AUTOMATIC SHUT-OFF

- BMS INFO-PAC automatically shuts OFF after 30 seconds without keyboard activity.
- BMS INFO-PAC shuts OFF automatically after 10 minutes when in *transmit* or *receive* mode.

2.3 SERVICE AND PRODUCT SUPPORT - CANADA

Should you experience any difficulties in system operation, customer assistance is available.

The procedure to receive such assistance is as follows:

1. Document the following information:

- system dysfunction
- corrective measures taken
- system model number
- system serial number
- purchase order information
- date of installation
- equipment location (i.e., city, address, etc.)

2. Call or Fax our Product Service line at:

company service number:

1-204-988-1234

company fax number:

1-204-654-2881

0

0

0

2.4 SET-UP MODES

Scrolling through each menu option should reveal settings as shown. Pictures to the right of each menu option below are factory default data items.



- POWER ON
- 1. M600-BMSLP 1.6
 - 2. CONFIS default
 - 3. TEST off
 - 4. PULSER 1s
 - 5. IN COUNT 1000
 - 6. MULTIPLIER 1
 - 7. VOL DISP 1.000
 - 8. SUPPRESS 0.010
 - 9. CONV off
 - 10. PRO RESERVE on
 - 11. NO FLOW off
 - 12. VOL P QUAD off
 - 13. VOL PPU 10
 - 14. VOL PW 400ms
 - 15. DYE PPU 00.00
 - 16. DYE PW 4.0ms
 - 17. W/M STANDARD no
 - 18. CLEAR ZEROS off
 - 19. CONSOLE none
 - 20. PUMP ID none
 - 21. DISPLAY bulk
 - 22. START KEY on
 - 23. ATC off
 - 24. COMP EMP 15PC
 - 25. STOP KEY disab
 - 26. SLOW FLOW 0.00
 - 27. MUX off
 - 28. B1 C.F. +00.00%
 - 29. B2 C.F. +00.00%
 - 30. B3 C.F. +00.00%
 - 31. B4 C.F. +00.00%
 - 32. B5 C.F. +00.00%
 - 33. B6 C.F. +00.00%
 - 34. B7 C.F. +00.00%
 - 35. B8 C.F. +00.00%
 - 36. B1 PROD gas
 - 37. B2 PROD gas
 - 38. B3 PROD gas
 - 39. B4 PROD gas
 - 40. B5 PROD gas
 - 41. B6 PROD gas
 - 42. B7 PROD gas
 - 43. B8 PROD gas
 - 44. B1 METER 1
 - 45. B2 METER 1
 - 46. B3 METER 1
 - 47. B4 METER 1
 - 48. B5 METER 1
 - 49. B6 METER 1
 - 50. B7 METER 1
 - 51. B8 METER 1
 - 52. TRANSMIT off
 - 53. RX MICRON off
- Menu options repeat.

0

0

0

2.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS

TABLE 1 – SUMMARY OF DEFAULT SETTINGS

OPTION	DESCRIPTION	default
CONFIG	sets menu options to custom or default configurations	default
TEST	sets test mode ON or OFF	off
PULSER	selects pulser input source: I.S. circuit external wiring or conduit wiring	i.s.
IN COUNT	indicates number of quadrature (input pulser) transitions per unit displayed	1000
MULTIPLIER	factor used to adjust pulser edges per unit of product (works with IN COUNT)	1
VOL DISP	sets number of decimal places in the volume unit display	1.000
SUPPRESS	sets number, if any, of units of flow suppression at beginning of transaction	0.030
CONV	metric – Imperial – US volume conversion	off
PRC RESTORE	automatically restores tier 1 price after tier 2 is used	on
NO FLOW	sets no flow (sale in progress but no product flow registering) timer	off
VOL P. QUAD	sets volume out pulser as single channel, with dye pulser option; or two channel quadrature pulser output with dye pulser disabled	off
VOL PPU	sets number of output pulses per unit volume of fuel	10
VOL PW	sets pulse width of fuel volume output pulses	4.0ms
DYE PPU	sets number of output pulses per unit volume of dye injected into fuel dispensed	00.00
DYE PW	sets pulse width of injected dye output pulses	4.0ms
W/M STANDARD	sets allowable pulser errors to N. American or European standards	na
CLEAR ZEROS	permits display or suppression of leading zeros in current sale	off
CONSOLE	selects type of communications protocol used (Kraus, Tokheim, Gilbarco)	kraus
PUMP ID	sets pump address used for serial data communication	not set
DISPLAY	sets current sale display interpretation; use default setting for BMS applications	bulk
START KEY	reserved for future expansion; set to default (disab) only	disab
ATC	enables/disables automatic temperature compensation at all metered product lines; can be overridden by B# PROD no comp option	on
COMP. TEMP.	sets the ATC (automatic temperature compensation) ambient temperature	15° C
STOP KEY	reserved for future expansion; set to default (disab) only	disab
SLOW FLOW	sets (for preset sales) number of fuel units dispensed when fast flow valve closes; slow flow valve only remains	0.600
MUX	multiplexer feature (used for multiplexed BMS and Master/Slave); set OFF for single product BMS	off
B1 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B1 PROD	+00.00%
B2 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B2 PROD	+00.00%
B3 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B3 PROD	+00.00%
B4 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B4 PROD	+00.00%
B5 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B5 PROD	+00.00%
B6 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B6 PROD	+00.00%
B7 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B7 PROD	+00.00%
B8 C.F	sets electronic calibration factor for correction of registering errors in meter assigned to B8 PROD	+00.00%
B1 PROD	defines fuel product at BUTTON 1 on BMS cabinet for ATC (automatic temperature compensation): gasoline, diesel, propane, butane, aviation gas, jet a, jet b, NH3, ethanol OR no compensation	gas
B2 PROD	defines fuel product at BUTTON 2 on BMS cabinet for ATC, as above, OR no compensation	gas
B3 PROD	selects fuel product at BUTTON 3 on BMS cabinet for ATC, as above, OR no compensation	gas
B4 PROD	selects fuel product at BUTTON 4 on BMS cabinet for ATC, as above, OR no compensation	gas
B5 PROD	selects fuel product at BUTTON 5 on BMS cabinet for ATC, as above, OR no compensation	gas
B6 PROD	selects fuel product at BUTTON 6 on BMS cabinet for ATC, as above, OR no compensation	gas
B7 PROD	selects fuel product at BUTTON 7 on BMS cabinet for ATC, as above, OR no compensation	gas
B8 PROD	selects fuel product at BUTTON 8 on BMS cabinet for ATC, as above, OR no compensation	gas
B1 METER	BUTTON 1 meter (from 1-8) must measure flow of B1 PROD fuel type	1
B2 METER	BUTTON 2 meter (from 1-8) must measure flow of B2 PROD fuel type	1
B3 METER	BUTTON 3 meter (from 1-8) must measure flow of B3 PROD fuel type	1
B4 METER	BUTTON 4 meter (from 1-8) must measure flow of B4 PROD fuel type	1
B5 METER	BUTTON 5 meter (from 1-8) must measure flow of B5 PROD fuel type	1
B6 METER	BUTTON 6 meter (from 1-8) must measure flow of B6 PROD fuel type	1
B7 METER	BUTTON 7 meter (from 1-8) must measure flow of B7 PROD fuel type	1
B8 METER	BUTTON 8 meter (from 1-8) must measure flow of B8 PROD fuel type	1
TRANSMIT	transmits pump configuration info to Micon 500 head	off
RX MICON	receives Micon 500M settings from units already programmed	off

C

C

C

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS - 3.1, 3.2, 3.3

3.1 CONFIG

Used to set all menu options to default values.

CONFIG default

Indicates MICON 500M menu options are at their default values.

CONFIG custom

Indicates MICON 500M menu options have been modified from default values. Pressing either the ◀ or ▶ keys will return options to default settings.

3.2 TEST

Used to put MICON 500M into continuous display test mode.

TEST off (default)

Indicates Micon 500M should be in standard operating mode. Pressing either the ◀ or ▶ key will turn TEST mode ON.

TEST on

Indicates MICON 500M should continuously run through display test mode until INFO-PAC is used to turn OFF test mode on the MICON. Pressing either the ◀ or ▶ key turns TEST mode OFF.

3.3 PULSER

Used to select pulser input source.

PULSER .i.s. (default)

Indicates pulser input is through the I.S. circuit external wiring.

PULSER conduit

Indicates pulser input is through conduit wiring on top of MICON 500M.

C

C

C

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS - 3.4, 3.5

3.4 IN COUNT

Works in conjunction with **MULTIPLIER** settings to indicate number of pulser edges which must be counted to register 1 unit volume of fuel flow.

Refers to number of edges that must be received on the two incoming pulser lines (F1 and F2) to register 1 unit of fuel flow. Indicates number of quadrature (input pulser) transitions per unit volume. This value is equal to 4 times the number of pulses on an individual pulser line.

Values for this option can be scrolled through using the ◀ or ▶ keys. Values are:

IN COUNT 1000 (default)

IN COUNT 100 ---

IN COUNT 10

IN COUNT 1

3.5 MULTIPLIER

Works in conjunction with **IN COUNT** settings to indicate volume of fuel flow equal to 1 unit.

Values for this option can be scrolled through using the ◀ or ▶ keys. Values are:

MULTIPLIER 1 (default)

MULTIPLIER 2

MULTIPLIER 4

MULTIPLIER 0.5

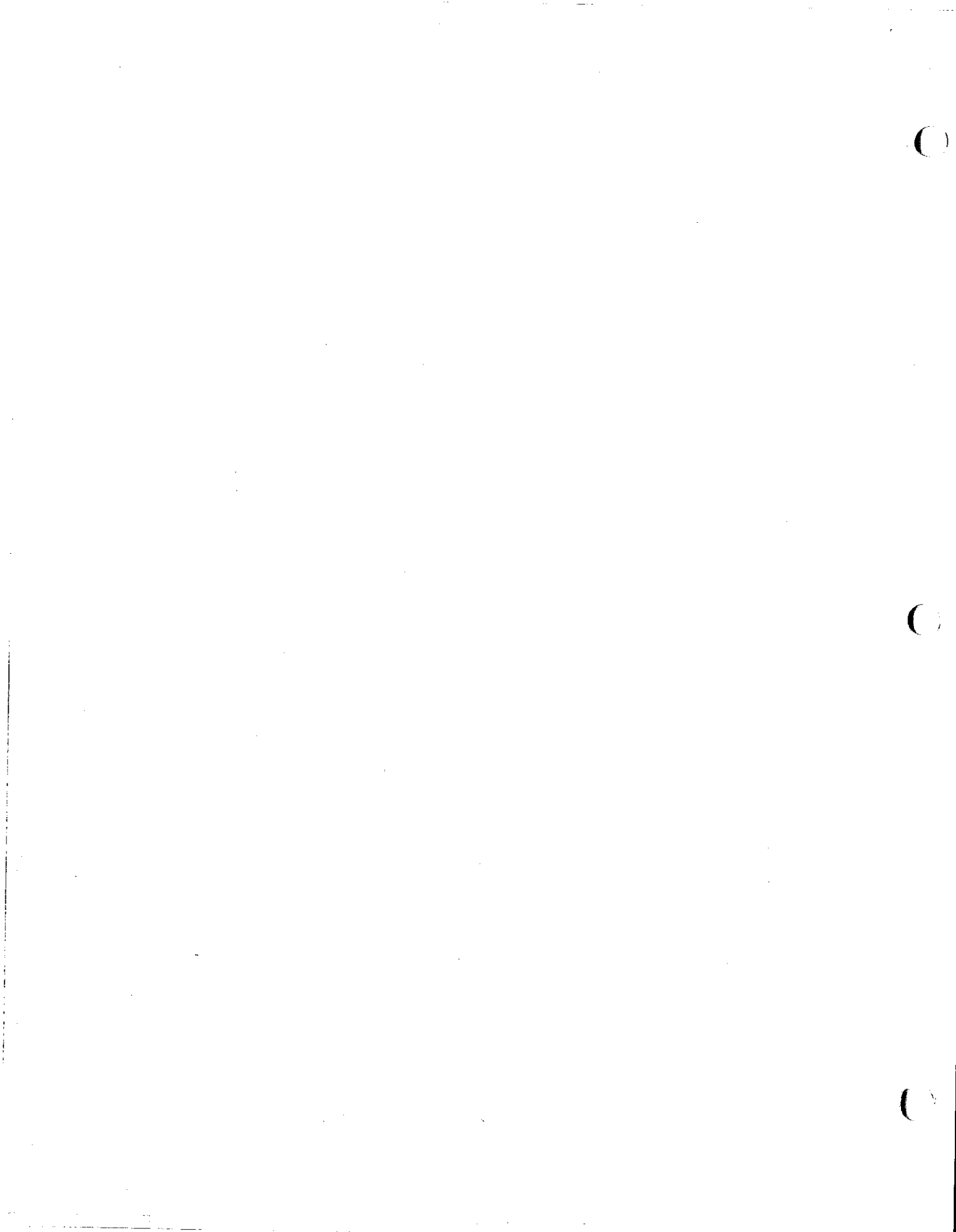
MULTIPLIER 0.25

EXAMPLE 1

IN COUNT 1000	MULTIPLIER 1 = 1000 PULSER EDGES / 1 UNIT OF FUEL FLOW = 1000 EDGES / UNIT .001 REGISTERS ON MICON 500M DISPLAY (PER EDGE)
IN COUNT 1000	MULTIPLIER 2 = 1000 PULSER EDGES / 2 UNITS FUEL FLOW = 500 EDGES / UNIT .002 REGISTERS ON MICON 500M DISPLAY (PER EDGE)
IN COUNT 1000	MULTIPLIER 4 = 1000 PULSER EDGES / 4 UNITS FUEL FLOW = 250 EDGES / UNIT .004 REGISTERS ON MICON 500M DISPLAY (PER EDGE)
IN COUNT 1000	MULTIPLIER 0.5 = 1000 PULSER EDGES / 0.5 UNITS FUEL FLOW = 2000 EDGES / UNIT .0005 REGISTERS ON MICON 500M DISPLAY (PER EDGE)
IN COUNT 1000	MULTIPLIER 0.25 = 1000 PULSER EDGES / 0.25 UNITS FUEL FLOW = 4000 EDGES / UNIT .00025 REGISTERS ON MICON 500M DISPLAY (PER EDGE)

EXAMPLE 2

IN COUNT 100	MULTIPLIER 1 = 100 PULSER EDGES / 1 UNIT FUEL FLOW = 100 EDGES / UNIT .01 REGISTERS ON MICON 500M DISPLAY (PER EDGE)
IN COUNT 100	MULTIPLIER 2 = 100 PULSER EDGES / 2 UNITS FUEL FLOW = 50 EDGES / UNIT .02 REGISTERS ON MICON 500M DISPLAY (PER EDGE)



3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS - 3.6, 3.7, 3.8

3.6 VOL DISP

The value of this option determines the number of decimal positions to be displayed in the volume unit field of the MICON 500M. The MICON 500M cannot be set to display a more precise reading than the incoming pulses will allow, and cannot be set to display less precisely than to the nearest unit. Values are:

VOL DISP 1.000 (default)

VOL DISP 1.00

VOL DISP 1.0

VOL DISP 1 (only available if IN COUNT setting is less than 1000)

3.7 SUPPRESS for retail applications

This option determines whether or not unit suppression is used, and type of unit suppression used. Values are:

SUPPRESS 0.030 (default)

For first 0.029 units of liquid fuel dispensed, MICON 500M sale register display shows ZERO. For 0.030 units and over, the sale amounts are displayed.

SUPPRESS 0.009

For first 0.008 units of liquid fuel dispensed, MICON 500M sale register display shows ZERO. For 0.009 units and over, the sale amounts are displayed. (This is the maximum suppression allowed for sales registered in U.S. gallons.)

SUPPRESS 0.000

MICON 500M sale register display shows the sale amount. Suppression is turned OFF.

3.8 CONV.

This option converts volume units dispensed to volume display units. For example, for fuel dispensed in *U.S. gallons*, the MICON 500M can convert the volume measurement displayed on the register to *litres*, using the INFO-PAC CONV. US gal-l setting.

See Table 2, next page, for conversion factors.

0

0

0

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.8 (cont'd), 3.9, 3.10

TABLE 2 - CONVERSION SETTINGS

INFO-PAC Option	Fuel Dispensing Units	MICON 500M Register Volume Display Units	Multiplication Factors Used for Conversion
CONV. OFF (default)	N/A	Volume dispensed not converted to litres.	N/A
CONV. us gal-l	U.S. gallons	litres (metric)	U.S. gallons multiplied by $3 \frac{61472}{65536}$ = litres
CONV. imp gal-l	imperial gallons	litres (metric)	Imperial gallons multiplied by $4 \frac{35789}{65536}$ = litres
CONV. l-us gal	litres (metric)	U.S. gallons	Litres multiplied by $\frac{17314}{65536}$ = U.S. gallons

3.9 PRC RESTORE for retail applications

This option is used when two tier pricing is in effect.

For example, a consumer who is a cardholder may receive a discount from the regular sale price of liquid fuel. If PRC RESTORE is set ON, MICON 500M register reverts to regular sale price (tier 1) when dispenser handle returned to OFF position. Values are:

PRC RESTORE on (default)

Price returns to the tier 1 price when the handle is returned to OFF position.

PRC RESTORE off

Price used for current sale is retained for next sale, unless explicitly changed by the user.

3.10 NO FLOW

This option controls length of time MICON 500M keeps motor and solenoid valve ON if a transaction is in progress but there is no product flow being registered. Anytime during the transaction (before flow starts or after flow starts), when there has been no fuel flow for the "NO FLOW" timer interval the motor and valves will be shut OFF and the sale terminated.

NO FLOW timer interval can be set from 15 seconds to 4 minutes, 15 seconds; in 15 second increments. (Previous model(s) permitted maximum timer value of 2 minutes.) See Table 3, next page, for flow timer settings.

0

0

0

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.10 (cont'd), 3.11, 3.12

TABLE 3 – NO FLOW SETTINGS

INFO-PAC SETTING	RESULT
NO FLOW off	MICON 500M will not shut down on a NO FLOW condition.
INFO-PAC SETTING	<p><i>Before flow starts OR after flow starts:</i></p> <p><i>Pump and valves shut OFF and transaction is terminated after NO FUEL FLOW occurs for the number of seconds on the INFO-PAC setting.</i></p>
15 seconds	
30 seconds	
45 seconds	
60 seconds	
75 seconds	
90 seconds	
105 seconds	
120 seconds	
135 seconds	
150 seconds	
165 seconds	
180 seconds	
195 seconds	
210 seconds	
225 seconds	
240 seconds	
255 seconds	

3.11 VOL P. QUAD

This option sets volume out pulser as a single channel or two channel output. Settings are:

VOL P.QUAD off (default)
 Volume out pulser is single channel.

VOL P.QUAD on
 Volume out pulser becomes a two channel quadrature pulser output.

Note: If the DYE PPU (dye pulser) option described on following page is used, VOL P. QUAD setting must be set to OFF.

3.12 VOL PPU

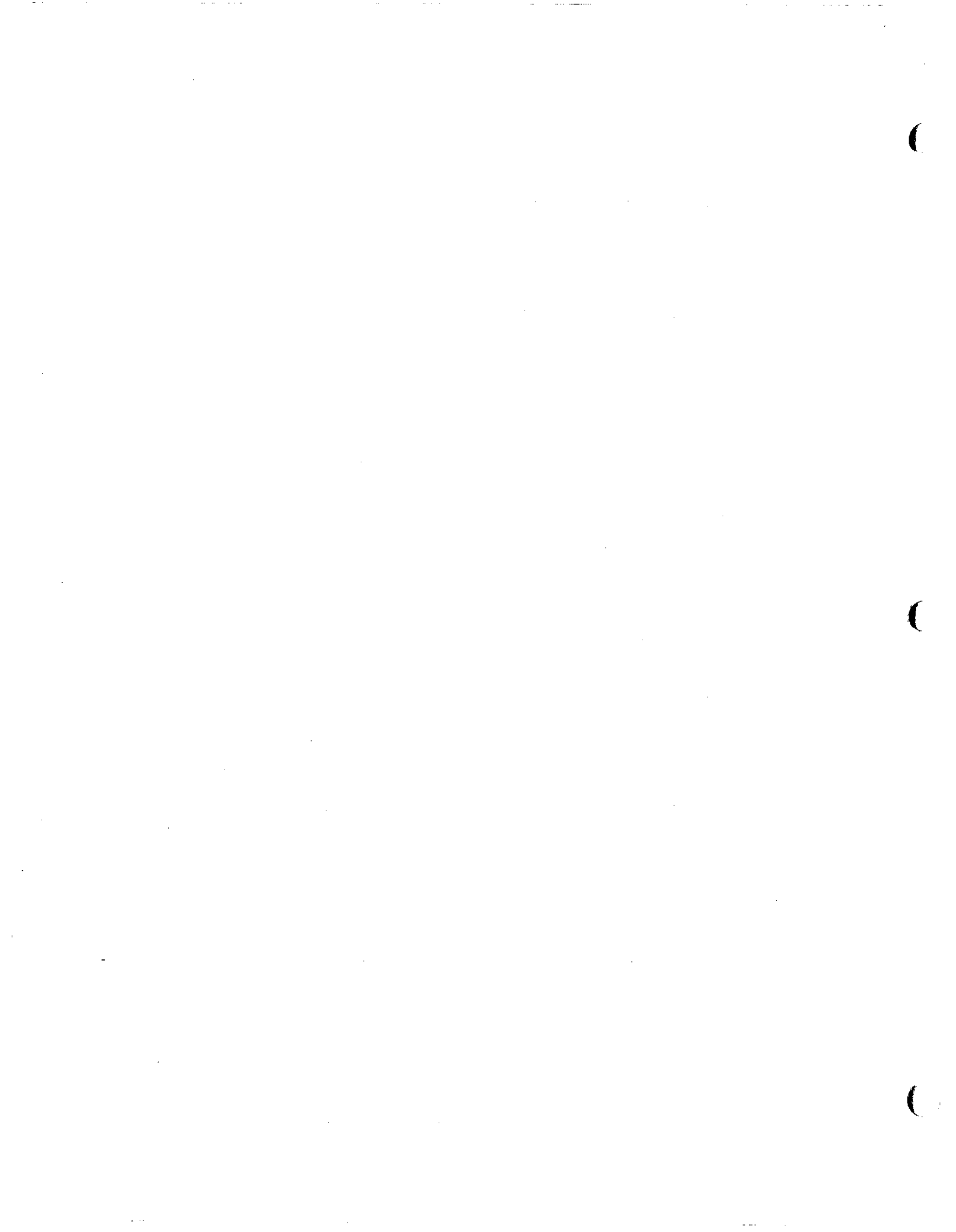
This option defines the number of output pulses per unit (PPU) transmitted on the Volume Out Pulse line of the MICON 500M.

This value cannot be more than IN COUNT value set for the MICON 500M.

A PPU less than 1 is not permitted by INFOPAC. Values are:

- VOL PPU 1
- VOL PPU **10 (default)**
- VOL PPU 100
- VOL PPU 1000

10.00
10.00



3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS - 3.13, 3.14, 3.15

3.13 VOL PW

This option sets the width of the Volume Pulse signal. This width is defined as the "on time" length of the pulse. Setting should be compatible with equipment used. Pulse width values are:

VOL PW 0.5ms
VOL PW 1.0ms
VOL PW 2.0ms
VOL PW 4.0ms (default)
VOL PW 17.0ms
VOL PW 26.0ms
VOL PW 150.0ms

3.14 DYE PPU

This option sets the number of output pulses per unit volume of dye injected into fuel dispensed for agricultural applications.

DYE PPU 00.00 (default)



DYE PPU 99.99

Note: If a setting other than '00.00' is selected, VOL P. QUAD setting, described on previous page, must be set to OFF.

3.15 DYE PW

This option sets the width of the dye pulse signal. This width is defined as the "on time" length of the pulse. Setting should be compatible with equipment used. Pulse width values are:

DYE PW 0.5ms
DYE PW 1.0ms
DYE PW 2.0ms
DYE PW 4.0ms (default)
DYE PW 17.0ms
DYE PW 26.0ms

0

0

0

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.16, 3.17, 3.18

3.16 W/M STANDARD

This option sets up the allowable pulser errors to meet the na (North American) or eu (European) *Weights and Measures* standards. Settings are:

W/M STANDARD na (default)

W/M STANDARD eu

3.17 CLEAR ZEROS

This option sets the MICON 500M register to display or suppress leading zeros on the current sale display. Settings are:

CLEAR ZEROS off (default)

Displays leading zeros in current sale display.

CLEAR ZEROS on

Suppresses leading zeros in current sale display.

3.18 CONSOLE

This option setting has no effect on the MICON 500M. When the "RX MICON" option is used (i.e., when the INFO-PAC is used to receive programmed settings) this option will show which communications protocol is used on the serial communications lines from the MICON 500M to the console.

Compatible hardware interface boards, available as *optional* features of the MICON 500M, must be installed. Communication protocols are:

CONSOLE kraus (default)

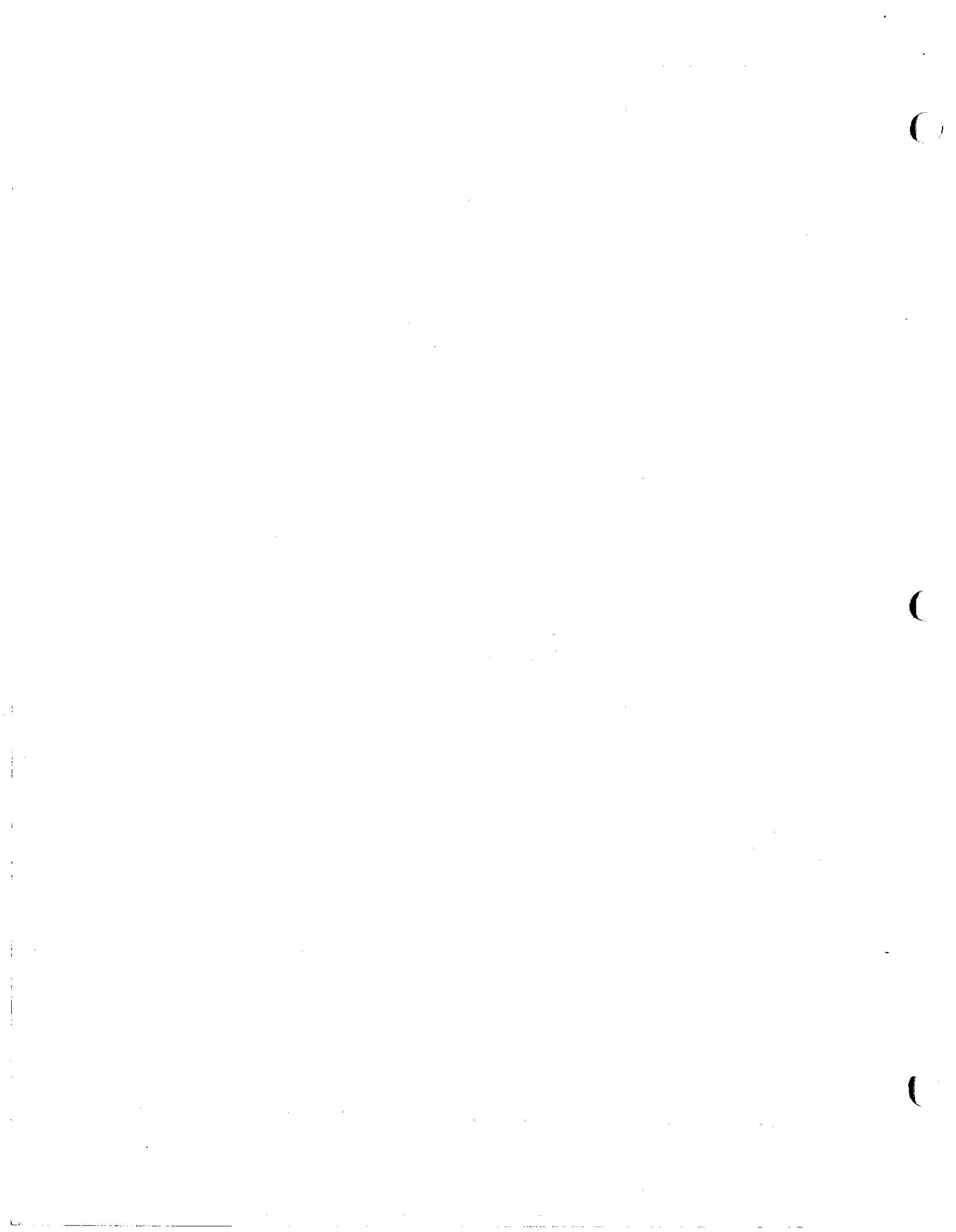
MCIU's (MICON communication interface units) manufactured by Kraus.

CONSOLE gilbarco

Consoles manufactured by *Gilbarco*.

CONSOLE tokheim

Consoles manufactured by *Tokheim*.



3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS -- 3.19, 3.20

3.19 PUMP ID.

This option sets the pump address used during serial communications between Micon 500M and console.

Values are:

PUMP ID. not set (default)

PUMP ID. 01

PUMP ID. 02

PUMP ID. 03



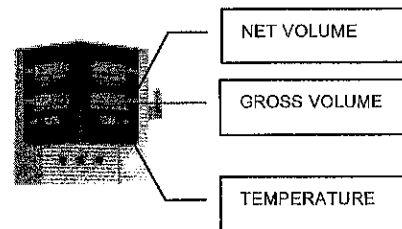
PUMP ID. 24

3.20 DISPLAY

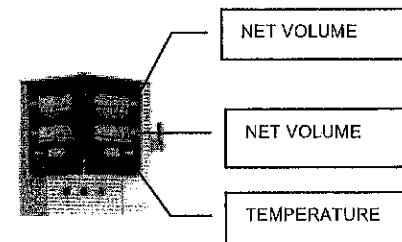
This option sets the way the current sale amount display on the MICON 500M is to be interpreted.

DISPLAY bulk

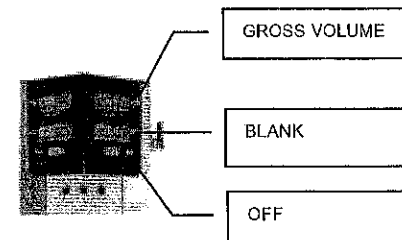
Display shows net volume - gross volume - temperature. Use this setting when both *temperature compensated and uncompensated* volumes are desired.

**DISPLAY comp**

Display shows net volume - net volume - temperature. Use this setting for display of compensated volume only when ATC is ON. Faceplate may cover one of the volume displays.



For either of the above settings (DISPLAY bulk or DISPLAY comp), when ATC is OFF display shows gross - blank - OFF.



C

C

C

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.21, 3.22, 3.23, 3.24

3.21 START KEY

The START KEY is reserved for future expansion. This option should remain set at:

START KEY disab (default)

3.22 ATC

This setting enables/disables Automatic Temperature Compensation feature for all meters in BMS system. It overrides ATC settings in PRODUCT option, except those defined as "no comp", described in section 3.28, page 18.

ATC on (default)

ATC off

3.23 COMP. TEMP.

This setting sets the temperature to which the ATC feature will compensate the fuel volume. If 60°F is used, the ATC inspection mode temperature will be in Fahrenheit instead of the default Celsius.

COMP.TEMP. 15°C (default)

COMP.TEMP. 60°F

COMP.TEMP. 20°C

3.24 STOP KEY

The STOP KEY is reserved for future expansion. This option should remain set at:

STOP KEY disab (default)

0

0

0

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.25, 3.26

3.25 SLOW FLOW

For PRESET SALES this option sets when the fast flow valve is closed so that only the slow flow valve is used. This option is set as the # OF VOLUME UNITS BEFORE THE PRESET AMOUNT IS REACHED. Use \triangleright to scroll to each digit position. Use \triangleleft to change value of each digit. Example:

If PRESET set to 30 litres,
and
SLOW FLOW set to 1 litre:

Fast flow valve closes at 29
litres. Last (30th) litre flows
slowly.

*Note: If the VOL DISP
option is changed, the
SLOW FLOW option must
also be adjusted, since
the decimal point will be
shifted.*



SLOW FLOW settings:

SLOW FLOW 0.000



SLOW FLOW 0.600 (default)



SLOW FLOW 9.999

3.26 MUX KEY

The MUX key selects or deselects the multiplexing option. For more than one fuel product to be metered through the same electronic register, it is necessary to establish a separate meter for each fuel product line, then multiplex the meters to the register.

If the system being configured by the INFO-PAC is standard Multiplexed BMS or Dual System (Master/Slave) BMS, which is also multiplexed, set option ON.

If the system is Single Product BMS, set MUX OFF.

MUX off (default)

MUX on

321.54

250

$$\frac{250.41 - 321.54}{321.54}$$

19.33

250.41

71.

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS -- 3.27

3.27 C. FACTOR

This sets the electronic calibration factor used to correct registration errors in each fuel flow meter. Multiplexed systems such as Multiplexed BMS or Dual System (Master/Slave) BMS may have from 1 to 8 meters requiring calibration. Single Product BMS systems use only 1 meter.

The calibration factor can be set from -19.99% to +19.99% for each meter utilized. Use \triangleright to scroll to each digit position. Use \triangleleft to change value of each digit. Settings are:

B1 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B2 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B3 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B4 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B5 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B6 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B7 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%
B8 C.F	-19.99%	\rightleftarrows	00.00% (default)	\rightleftarrows	+19.99%

"B#" indicates product selection buttons beneath the computerized register on BMS cabinet. Each button corresponds to a fuel product line, controlled by a particular meter.

To calculate the calibration factor (expressed as a percentage) for each meter, follow the electronic calibration guidelines described in the MICON 500M installation manual:

Method for calibration of system as described in MICON 500M Installation Manual:

1. Go to section 3.31 - RX MICON, page 21 of this manual. Follow steps to receive MICON 500M settings with the INFO-PAC, if electronic register has already been programmed at an earlier time.
2. If MICON 500M is equipped with ATC (automatic temperature compensation), set INFO-PAC menu option **ATC off**.
3. Set all INFO-PAC calibration factors (B1 to B8) to **C.FACTOR +00.00%** (default).

$$\frac{250.11 - 259.5}{259.5}$$

$$-9.39$$

$$-3.6$$

$$19.33$$

$$\frac{19.33}{15.73}$$

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS - 3.27 (cont'd)

- 4. Go to section 3.30 - TRANSMIT, page 19 of this manual. Follow steps to transmit INFO-PAC settings to MICON 500M.
- 5. Place MICON 500M handle switch in ON position. Observe MICON sales and volume displays reset to zero.
- 6. Dispense a known volume of product controlled by meter associated with B1 (button 1 on BMS cabinet) and record the reading on the volume display.
- 7. Use formula below to calculate percentage correction required:

$$\% \text{ Correction} = \frac{\text{Actual Volume} - \text{Register Volume}}{\text{Register Volume}} \times 100$$

58.96

- 8. Set calibration factor on INFO-PAC to the closest setting available.

Example

Product dispensed: 25.00 Litres
 Register reading: 26.360 Litres

58.96 25.00

250 338.94

26.

$$\% \text{ Correction} = \frac{(25.000 - 26.360)}{26.360} \times 100 = - 5.159\%$$

Set INFO-PAC calibration factor to C-FACTOR - 5.16%.

Follow steps 6 to 8 for any additional meters (i.e., meters assigned to B2, B3, B4, B5, B6, B7 and B8).

Place the programming switch into program mode and transmit the calibration factors to the MICON with the TRANSMIT function. The dollars section of the MICON 500M display would show "-5.16" for the example given.

- 9. Repeat steps 5 and 6 to verify the calibration of the MICON 500M.
- 10. If ATC used at this installation, set ATC INFO-PAC menu option ATC on, and retransmit.
- 11. Replace the cover of the explosion-proof MICON 500M housing and, if all programmable settings have now been transmitted:
 - a) Install a suitable legal seal through the two adjacent drilled cover bolts to ensure the cover cannot be removed without breaking the seal.

step 11 cont'd next page

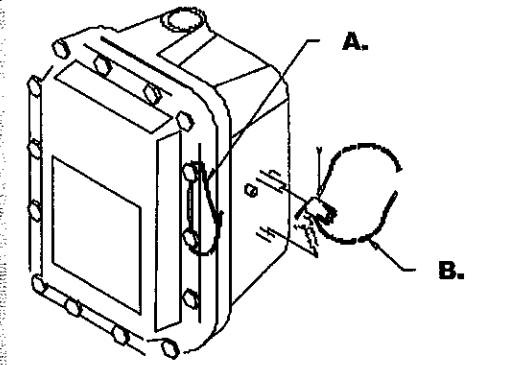
()

()

()

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.27 (cont'd), 3.28

- b) Install a suitable legal handle seal through the handle shaft, behind the cotter pin, so that the handle coupler cannot be removed from the handle shaft.



3.28 PRODUCT


This setting defines fuel products at buttons 1 to 8 on BMS cabinet. If a particular fuel product line is not represented on the INFO-PAC, select the "no comp" setting. This means no automatic temperature compensation is available for that product.

ATC selection (except "no comp") can be overridden at all meters by the ATC ON/OFF option, described in section 3.22, page 14.

Options are:

B1 PROD



(Use  to select gasoline, diesel, propane, butane, aviation gas, jet a, jet b, NH₃, ethanol or *no comp* at each button; B1 to B8.)

B8 PROD

Each fuel type is associated with a density. Table 4, next page, is provided for your information.

()

()

()

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.28, 3.29



TABLE 4 – FUEL PRODUCT DENSITIES

INFO-PAC SETTINGS	FUEL DENSITIES	VCF TABLE REFERENCE
PRODUCT gas (default)	730 kg / m ³	API 54B
PRODUCT diesel	840 kg / m ³	API 54B
PRODUCT propane	510 kg / m ³	ASTM-IP 54
PRODUCT butane	580 kg / m ³	ASTM-IP 54
PRODUCT av gas {aviation gas}	710 kg / m ³	API 54B
PRODUCT jet a {jet kerosene, turbine fuel}	800 kg / m ³	API 54B
PRODUCT jet b {naphtha}	760 kg / m ³	API 54A

3.29 METER

This setting defines meters assigned to buttons 1 to 8 on BMS cabinet. Correct settings are important. Fuel flow meters must be assigned to the correct fuel types defined by the product buttons described above.

Settings are:

B1 METER (Use  or  to select 1, 2, 3, 4, 5, 6, 7 OR 8. Numbers 1 to 8 represent meters. Think of B1 METER as meaning "the meter associated with button 1 product on the BMS cabinet".)



B8 METER

Example:

Meter assigned to button 1 product will be the same meter assigned to button 2 product if both designate "gasoline" as product types. Thus, if meter 1 records gasoline flow:

On the INFO-PAC, the number "1" would be selected for B1 METER (i.e., "button 1 meter"). Number "1" would also be selected for B2 METER (i.e., "button 2 meter").

3.30 TRANSMIT

This menu option is used to transmit the INFO-PAC settings to the MICON 500M unit.

To transmit information to the MICON 500M:

1. Switch OFF the head power to the MICON 500M, by removing cover of explosion-proof MICON 500M housing and removing fuse. The MICON 500M display should be flashing. This requires breaking of a *Weights and Measures* seal on the cover, and removal of bolts. Flip switch inside MICON 500M to enable programming mode.

C

C

C

3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.30 (cont'd)

If it is not convenient to remove MICON 500M cover, there is an alternative method of shutting OFF head power, and permitting 1-time programming only:

1. Go to breaker box and turn power OFF. **Caution: Ensure breaker box does not feed power to equipment which should remain ON.**
2. Remove cotter pin from handle shaft on the MICON 500M, and turn handle shaft DOWN to battery OFF position. This requires breaking of a *Weights and Measures* seal through the handle shaft, behind the cotter pin. Leave battery OFF for 30 seconds for a completely "cold start".


2. Scroll to INFO-PAC TRANSMIT option. Set **TRANSMIT on**.



ATTENTION

Before transmitting settings from the INFO-PAC to the MICON 500M electronic pump head, scroll carefully through all options displayed on the INFO-PAC, and ensure that each and every one is still on the desired setting, even if you have changed only a single setting.


Whenever programming with the INFO-PAC, ALL parameters are rewritten in the MICON 500M.

3. Locate optical sensor (oval "hole" ) at right of price display on MICON 500M.
4. Aim INFO-PAC transmitter/receiver (located in center behind red tinted filter on edge of INFO-PAC) at MICON 500M optical sensor.

Red LED to left of MICON 500M price display flashes as MICON receives data from INFO-PAC.

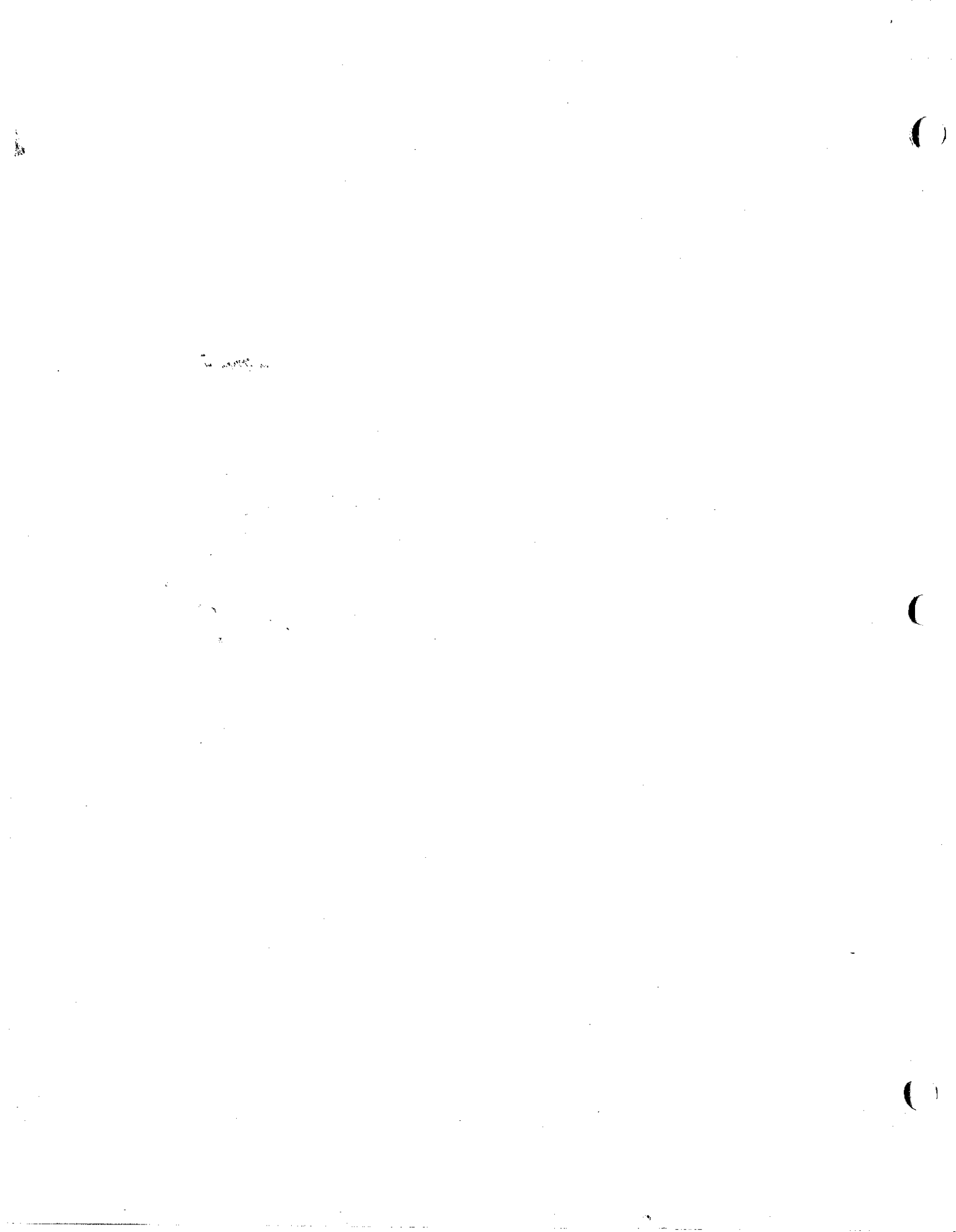
5. When MICON 500M has correctly received setup information, will show on MICON 500M price display.



6. Exit programming mode by flipping switch inside  MICON 500M to DOWN (Normal position).

This step is unnecessary if program mode was entered using alternative method in Step 1 (preceding page).

7. Switch the head power back ON and run the MICON 500M using the new settings.
8. Replace the cover of the explosion-proof MICON 500M housing and:
 - a) Install a suitable legal seal through the two adjacent drilled cover bolts to ensure the cover cannot be removed without breaking the seal.
 - b) Install a suitable legal handle seal through the handle shaft, behind the cotter pin, so that the handle coupler cannot be removed from the handle shaft.



3.0 DESCRIPTION OF PROGRAMMABLE MENU OPTIONS – 3.31

3.31 RX MICON


This menu option is used for INFO-PAC to receive MICON 500M settings from units which have already been programmed.

To receive information from the MICON 500M:

1. Go to breaker box and turn power OFF. **Caution: Ensure breaker box does not feed power to equipment which should remain ON.**

Alternative: Switch OFF the head power to the MICON 500M, by removing cover of explosion-proof MICON 500M housing and removing fuse. This requires breaking of a *Weights and Measures* seal on the cover, and removal of bolts.

The MICON 500M display should be flashing.

2. Scroll to INFO-PAC RX MICON option. Set **RX MICON on**.
3. Locate optical sensor (oval "hole" ) at right of price display on MICON 500M.
4. Aim INFO-PAC transmitter (located behind red tinted filter at centre edge of INFO-PAC) at MICON 500M optical sensor.

Red LED to left of MICON 500M price display flashes as INFO-PAC receives data from MICON 500M.

5. When INFO-PAC has received a copy of the MICON 500M setup information correctly, INFO-PAC display will show "Received Micon".

