

**SCOPE**

This manual contains information concerning the installation, operation and maintenance of the Vantage 3000. To ensure proper performance of the unit, the instructions should be thoroughly understood and followed.

**Keep the manual in a readily accessible location for future reference.**

Changes and additions to the original edition of this manual will be covered by a “CHANGE NOTICE” supplied with the manual. The change notice will identify the sections in this manual where the changes have occurred.

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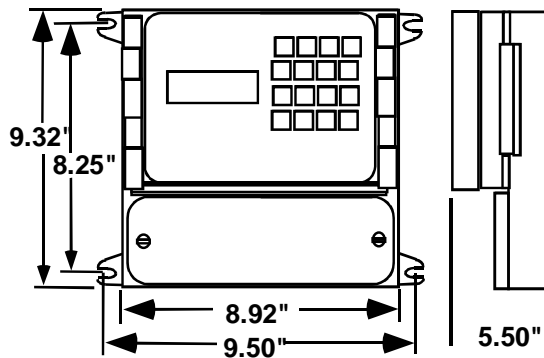
## GENERAL SPECIFICATIONS

|                      |                                                                                                                                                                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pipe Size Range      | Strap On Sensors: 1" to 8"<br>Vee Shot or W Shot Configuration                                                                                                                                                                                                                         |
| Output               | One 4-20 mA DC isolated; 800 ohms max.<br>RS-232 Serial Port, 9600 – 36500 Baud, Modbus™ Protocol<br>12VDC, 100mA Maximum                                                                                                                                                              |
| Display              | Backlit LCD, 128x64 Graphic Module                                                                                                                                                                                                                                                     |
| Programming          | Front panel mounted 16 button keypad., Computer or Palm Pilot                                                                                                                                                                                                                          |
| Power                | 80/240 VAC, 50/60 Hz, or 12-28 VDC @ 350 mA continuous.                                                                                                                                                                                                                                |
| Accuracy             | +/- 0.5% of actual flow                                                                                                                                                                                                                                                                |
| Sensor               | Strap On:<br>Temperature Range: -20° to 160° F (-30° to 70° C)<br>-20° to 300° F, High Temperature option<br>Operating Frequency: 640 or 1280 KHz<br>Housing: Anodized aluminum, Ultem plastic<br>Cable: 50 feet of Triaxial PVC coated Std.<br>(1000 ft maximum) Belden 9222 or equal |
| Electronic Enclosure | IP66/NEMA 4X standard, temperature range: -4° to 158° F (-20° to 70° C)<br>Optional with heater, temperatures down to -40° F (-40°C)                                                                                                                                                   |

# Installation

## Enclosure Mounting

The enclosure is rated IP 66 (NEMA 4X) and can be mounted indoors or out. A sunshade is recommended for outdoor installation. Openings used for the sensor and power must be properly prepared and sealed to maintain the rating. There are two stainless steel mounting brackets factory assembled to the enclosure.



The mounting feet have slots for ¼" bolts (4 places).

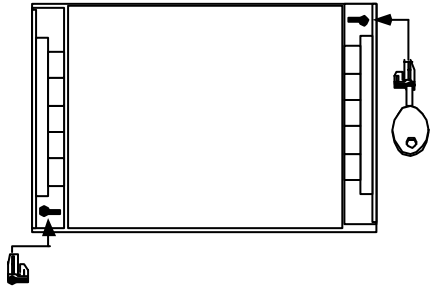
The electronics should be mounted with the display at eye level or lower. There are three holes in the bottom of the enclosure for ½" conduit fittings. These holes have rubber plugs installed at the factory. If you do not use all three holes for conduit, leave the rubber plugs in the holes to protect the enclosure ratings.

### Opening the Enclosure:

There are two hinged door clasps on the front cover of the enclosure. To open, put thumb on one of the hinges, pull toward the outside of the enclosure. Once the hinge pops to the outside it will lower allowing the clasp at the bottom of the hinge to release. Swing the cover towards the front to open. The opposite side will act as a hinge to swing the door freely. To close, clasp the bottom side of the hinge and push the top of the hinge toward the enclosure until it locks.

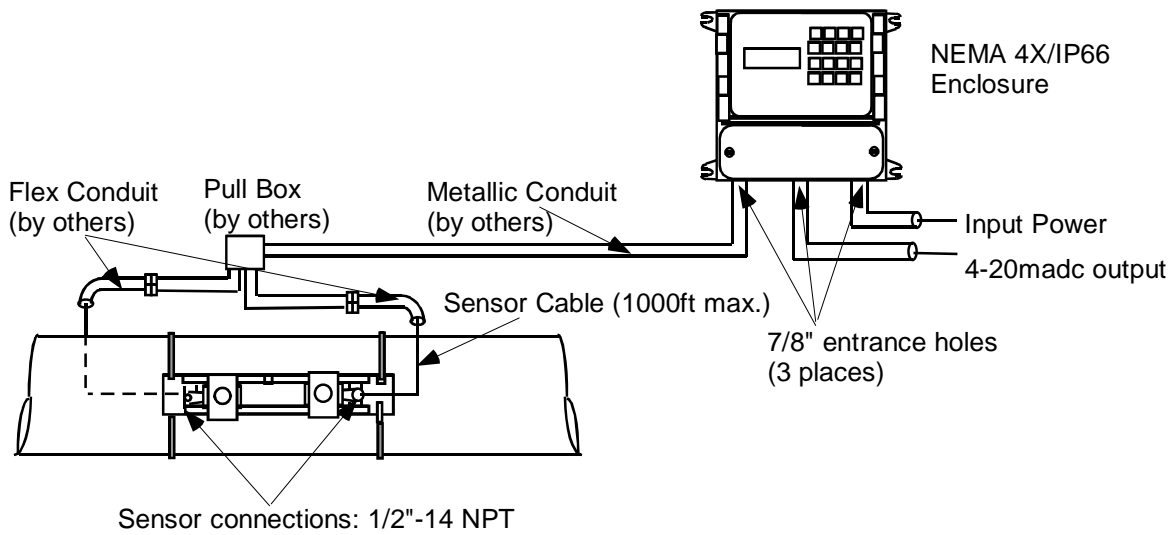
## Hinge Lock and Optional Door Lock

There are two plastic gray plugs supplied with the Vantage 3000. These plugs may be used to permanently disable one side of the hinged handles. If an optional door lock was supplied with the unit then one side of the hinge handle should be plugged and the other side will have the key lock used. Either side hinge handle may be disabled. Insert the gray plug into the keyhole. **Warning: This will permanently disable the hinge handle.** The other side can be used for the key provided for the optional lock.



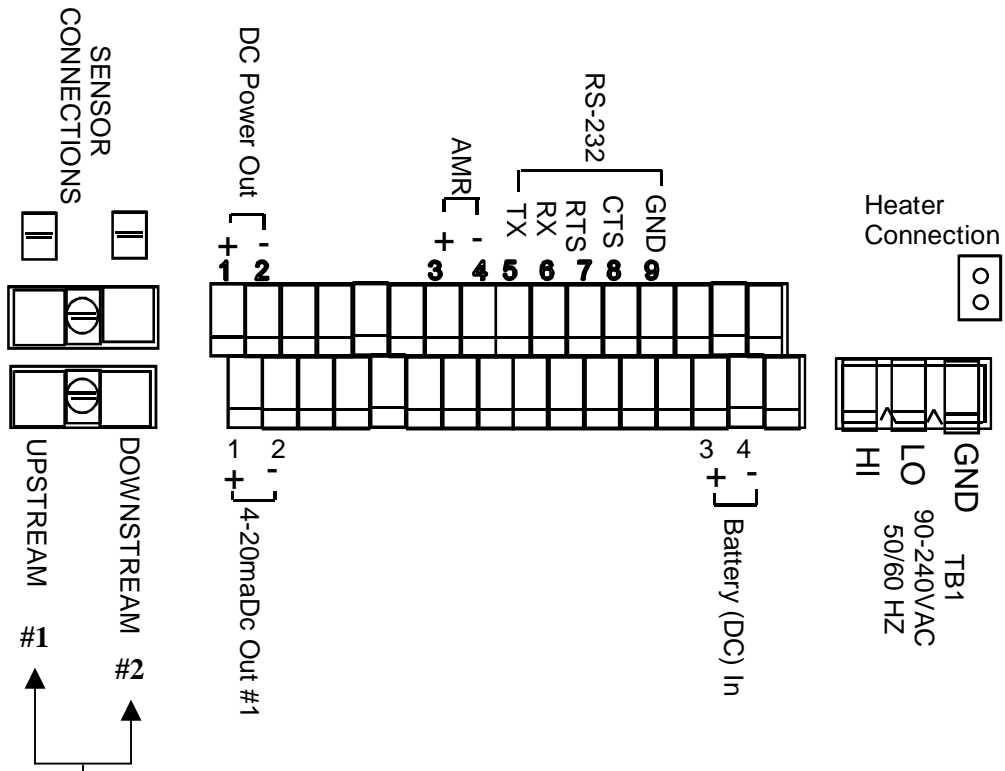
**Note:** The key will have to be left in the hinge handle if the door is to remain unlocked. The only way the key can be removed is if the hinge handle is locked.

### 3000 Recommended System Diagram

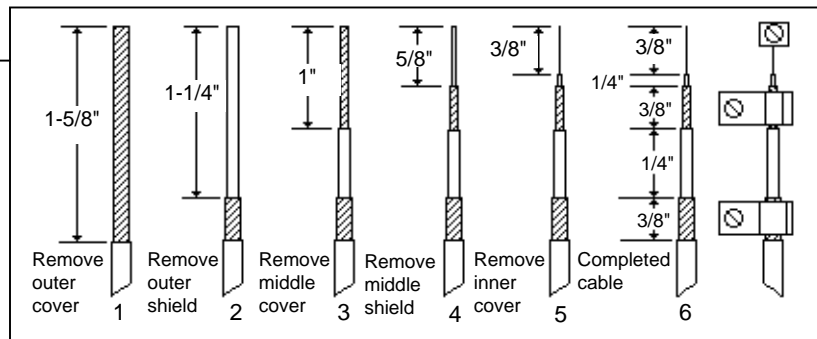


# Wiring Diagram

There are three terminal strips provided for all wiring of the Model 3000. The AC power terminal is separate from the other two terminal strips. The power terminal strip has three connections for High, Low and Ground for AC voltage only. Refer to the wiring diagram below for all internal wiring connections. The specifications for the load requirements for each input are on Page 1-2 General Specifications. The unit may also be powered with 12-24 VDC at TBA Terminals 3 (+) and 4 (-).



## Sensor Cable Preparation



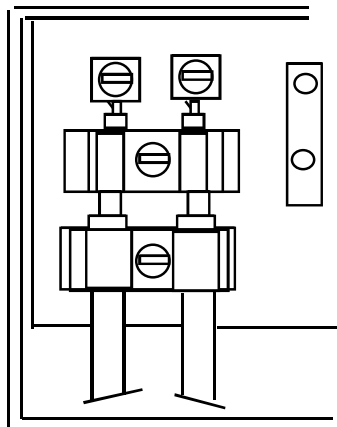
## Sensor Cable Preparation

Sensor cable connections. Before pulling the sensor cables through the conduit, mark the ends of the cables to indicate which is the upstream and downstream sensor cable. Leave approximately 8 inches of cable extending from the conduit in the enclosure. Prepare the cable ends in the following manner.

1. Remove outer cable cover. Measure 1-5/8" from the end of the cable. With a cutting tool, carefully cut through the outer covering completely around the cable making sure not to cut into the outer shield. Make another cut from the first cut to the end of the cable and remove the outer cover.
2. Remove outer shield. Measure 1-1/4" from the end of the cable with a pair of small cutters, cut the shield around the cable at the measured point and remove the cut off shield.
3. Remove middle cover. Measure 1" from the end of the cable. With a cutting tool, carefully cut through the middle covering completely around the cable making sure not to cut into the middle shield. Make another cut from the first cut to the end of the cable and remove the middle cover.
4. Remove middle shield. Measure 5/8" from the end of the cable. With a pair of small cutters, cut the shield around the cable at the measured point and remove the cut off shield.
5. Remove inner cover. Measure 3/8" from the end of the cable. With a cutting tool or pair of wire strippers, carefully cut the inner covering completely around the cable, making sure not to cut into the center conductor and remove the inner cover.

After the ends of the cables have been prepared, loosen the screws on the sensor inputs at the lower left corner of the PCB and remove the two pairs of clamps. Take the upstream cable and insert the center conductor into the top terminal of the upstream sensor and tighten the screw. Slightly pull on the cable to ensure the wire is secured to the terminal. Take the downstream cable and insert the center conductor into the top terminal of the downstream sensor and tighten the screw. Slightly pull on the cable to ensure the wire is secured to the terminal.

Place the two pair of clamps over the middle and outer shields and secure them into place. **Verify that the clamps are making good contact with the shields and that no wires of the shields are extending beyond their own clamp down area.**



# Triax Cable Splice Procedure

## Materials Required

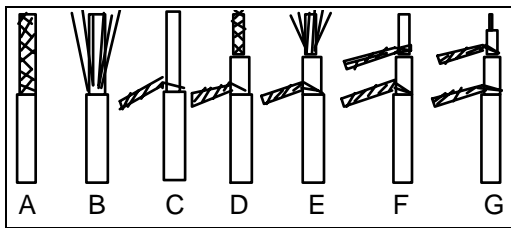
- \* 4 pigtail cap crimps (wire size 18-12)
  - \* 2 center conductor cap crimps (wire size 22-14)
  - \* Strips of splice wrap
- Crimp tool (customer supplied)  
Knife (customer supplied)  
Pointed tool (customer supplied)  
Junction box (customer supplied)

A cable connection kit may be purchased through Eastech Badger that will include the \* items above (Part # 541874).

Trim each of the four cables at the junction box to 9 inches in length. Each of the four cables can now be prepared as described in the sequence following:

Using a knife, trim two inches of the outer jacket from each cable. The wire braid beneath the outer jacket must not be cut. See "A".

Using a pointed tool, carefully comb out the outer braid of each cable as shown in "B". Form the combed braid into a pigtail dressed to the side of the cable as shown in "C".



Trim 1 inch of the inner jacket from each of the cables as shown in "D". Again, use care not to cut the inner braid beneath the inner jacket.

Using a pointed tool, carefully comb out the inner braid "E" and form into a pigtail dressed to the same side of the cable as outer pigtail in "F".

Remove 1/2 inch of insulation from the inner conductor of each cable. Cut the outer pigtail to the same length as the inner pigtail on each cable. "G" depicts the completed preparation.

## Cable Termination

Pull cables approximately 18 inches outside of junction box. Select one sensor cable and one cable from the electronic enclosure and place them side by side as shown in Fig. 1. Twist each cable's outer pigtails together, then the inner pigtails together and finally the center conductors together to form the cable splice. In similar fashion, connect the remaining sensor cable and the cable from the electronic enclosure.

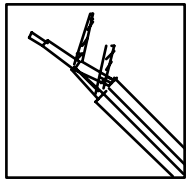


FIG 1

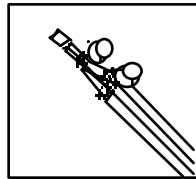


FIG 2

Identification of upstream and downstream sensor cables must now be made. Connect a short wire from the center conductor splice to the inner shield pigtail splice on the upstream sensor cable. Using a multimeter determine the upstream sensor cable at

the electronic enclosure end by continuity measurement. Identify the upstream cable for later termination.

Remove the shorting wire and using the cap crimps supplied, crimp the larger caps on each spliced pigtail and the small cap on the center conductor splice as shown in Fig. 2. Repeat this procedure for the second cable.

At this point turn power on at the electronics and verify that an OK signal condition appears on the display.

**Turn power "OFF".**

## Using Splice Strips

1. Remove cover off of strips
2. Totally wrap strips tightly around all of the splice connections.

The finished splices should be coiled inside the junction box. When properly placed, the splices should be clear of the junction box cover area. Proper sealing of the junction box is necessary for watertight integrity.

This completes the triax cable splice connection.

# QuickCal Menu Functions

## Section

# 3

|        |    |      |
|--------|----|------|
| Flow   | 00 | GPM  |
| Totl   | 00 | GAL  |
| X10    |    |      |
| Vel.   | 00 | FPS  |
| Status | -  | Okay |

The screen to the left represents the main screen of the Model 3000. While in the main screen the user may press the “UP” key to display Alarms tripped and Relays energized screen, Sensor Gain Screen and Fluid transit time screen. To program, recalibrate or change any function in the Model 3000, press the “MENU” key. This will display the Main Menu for all of the functions of the Model 3000 QuikCal firmware. Below is a quick reference for the main menu and a brief description of each to allow the user to navigate to the required locations.

MENU

|                             |                                                                                                                                                                              |                                                                                                                                                                     |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>&gt;01) Review Meter</b> | Selection of this will display the application set up parameters and sensor orientation (Vee Shot, Zee Shot, W Shot) and the sensor separation that the meter is programmed. |                                                                                                                                                                     |
| <b>&gt;02) Program</b>      | 01) Measure Units                                                                                                                                                            | To assign engineering units for flow, velocity and measurement.                                                                                                     |
|                             | 02) Sensor Install                                                                                                                                                           | To calibrate pipe parameters. (pipe size, pipe material & schedule, fluid, sensor type and mounting style (Vshot, Zshot, WShot) and Sensor installed cable lengths. |
|                             | 03) Totalizer                                                                                                                                                                | To select totalizer engineering units and multiplier.                                                                                                               |
|                             | 04) 4-20 Output                                                                                                                                                              | To adjust, assign and set full scale of the 4-20ma output and to assign low flow shutdown.                                                                          |
|                             | 05) Damping                                                                                                                                                                  | To adjust damping time.                                                                                                                                             |
|                             | 06) Lost Signal                                                                                                                                                              | To adjust Lost signal time and Fail to zero or span.                                                                                                                |
|                             | 07) Flow Sim                                                                                                                                                                 | Flow simulation                                                                                                                                                     |
|                             | 08) N/A                                                                                                                                                                      |                                                                                                                                                                     |
|                             | 09) N/A                                                                                                                                                                      |                                                                                                                                                                     |
|                             | 10) N/A                                                                                                                                                                      |                                                                                                                                                                     |
|                             | 11) Meter Factor                                                                                                                                                             | Zero Offset Adjustments                                                                                                                                             |
| <b>&gt;03) Daily Sum</b>    | 01) Daily Sum                                                                                                                                                                | To review daily average, minimum and maximum parameters.                                                                                                            |
| <b>&gt;04) Set Clock</b>    | To set time and date                                                                                                                                                         |                                                                                                                                                                     |
| <b>&gt;05) System Setup</b> | 01) Language                                                                                                                                                                 | To set unit to display language to be used.                                                                                                                         |
|                             | 02) Display                                                                                                                                                                  | To set display contrast and backlighting.                                                                                                                           |
|                             | 03) Comm. Ports                                                                                                                                                              | To set RS-232 communications and baud rates.                                                                                                                        |
|                             | 04) N/A                                                                                                                                                                      |                                                                                                                                                                     |
|                             | 05) N/A                                                                                                                                                                      |                                                                                                                                                                     |
|                             | 06) Totals Reset                                                                                                                                                             | To reset the totalizer.                                                                                                                                             |
|                             | 07) New Password                                                                                                                                                             | To change password.                                                                                                                                                 |
|                             | 08) Summary Reset                                                                                                                                                            | To clear daily summary.                                                                                                                                             |
|                             | 09) Sensor Option                                                                                                                                                            | To set sensor power from Normal to High or to change polarity of sensors.                                                                                           |
|                             | 10) Meter reset                                                                                                                                                              | To reset to factory defaults.                                                                                                                                       |
|                             | 11) New Firmware                                                                                                                                                             | To upload new firmware into meter.                                                                                                                                  |

|        |    |      |
|--------|----|------|
| Flow   | 00 | GPM  |
| Totl   | 00 | GAL  |
| X10    |    |      |
| Vel.   | 00 | FPS  |
| Status | -  | Okay |

**Main Flow Screen:** The main flow screen will have four pages: **Main Flow** screen (to view flow and totals, **Sensor Signal and Gain** screen (to view the transmit and receive signal and the gain strengths) and the **Phase and Reynolds #** screen (internal timing). To view these screens press the UP key.

**>01) Review Meter:** To review the application parameters and the sensor orientation (vee shot, zee shot or Wshot) that the meter is programmed for press the Menu key and then the 01 key. The first screen will allow the user to review the **sensor separation** that is required for the application and the sensor orientation (V, Z or W Shots). Press the Enter key and the next screen (**Program Parameters**) will appear.

|                 |            |
|-----------------|------------|
| PIPE MTL        | XXXXXXXXXX |
| WALL THK        | ****       |
| PIPE OD         | ****       |
| SENSOR TYP      |            |
| ****.****(FREQ) |            |
| FLOW @ 20 MA    | ****       |
| LINER MTL       | ****       |
| LINER THK       | ****       |

These are the parameters that the meter has been calibrated. This will allow the user to use a quick check for pipe size, sensor type and frequency and the maximum flow rate for the 4-20mADC output. Press the Enter key.

Press the Enter key to return to the main menu.

**>02) Program**

**01) Measure Units:**

From the main screen press the **MENU** key, number **02**. Enter Security ID (00000000 from the factory), press **ENTER** key and number **01**.

**Flow Units:**

Select the flow engineering unit desired by pressing the number in front of the selection. Units available are:

|            |
|------------|
| Flow Units |
| 01) GPM    |
| 02) GPD    |
| 03) MGD    |
| 04) CFS    |
| 05) CFM    |
| 06) CFD    |

- 01) GPM, gallons/minute
- 02) GPD, gallons/day
- 03) MGD, million gallons/day
- 04) CFS, cubic foot/second
- 05) CFM, cubic foot/minute
- 06) CFD, cubic foot/day
- 07) LPS, liters/second
- 08) LPM, liters/minute
- 09) LPD, liters/day
- 10) MLD, million liters/day
- 11) MS3, cubic meters/second
- 12) M3H, cubic meter/hour
- 13) M3D, cubic meter/day
- 14) IGM, imperial gallons/minute
- 15) BPH, barrels/hour

After pressing the selected flow units number desired the next screen will automatically appear:

**Flow Display Format:**

The Flow Display Format screen simply asks how many digits you want to show to the right of the decimal point. Press the number that corresponds to your selected value: 01) #, 02) ##, 03) ###. Example: GPM, #, will show a direct flow reading (e.g. 100 GPM).

Enter the number in front of the desired Flow Display format and the program will automatically display the Dimension Units screen.

## >02) Program (Continued)

### Dimension Units:

The dimension units will allow the user to select the engineering measuring units desired to be selected. Available dimensional units are: 01) Inches, 02) Feet, 03) Meters, 04) Centimeters and 05) Millimeters.

After pressing the selected dimension units number desired the program will automatically take you back to the Program/Cal. Screen.

### >02) Sensor Install:

The sensor install functions will allow the user to select pipe size, pipe material, fluid parameters and sensor type selections. From the main screen press MENU, 02, press Enter, pass the password screen and press 02. The first screen to appear is for programming the unit for the sensor type to be used.

### Sensor Model:

#### Strap On Sensor:

- 01) V30S-1280 is the small new style strap on sensor and is 1280KHZ operating frequency.
- 02) V30ST-1280 is the small new style strap on sensor for high temperature applications and is 1280KHZ operating frequency.
- 03) N/A
- 04) N/A
- 05) V30S-640 is the small new style strap on sensor and is 640KHZ operating frequency.
- 06) V30ST-640 is the small new style strap on sensor for high temperature applications and is 640KHZ operating frequency.
- 07) N/A
- 08) N/A
- 09) V52S-1280 is the small new style strap on sensor used on thin wall and copper/brass pipe applications and is 1280KHZ operating frequency.
- 10) V52ST-1280 is the small new style high temperature strap on sensor used on thin wall and copper/brass pipe applications and is 1280KHZ operating frequency.

After pressing the selected sensor style number desired, the program will automatically take you to the Pipe Material screen.

### Pipe Material:

| Pipe Material    |
|------------------|
| 1) Carbon Stl    |
| 2) Stainless Stl |
| 3) PVC           |
| 4) N/A           |
| 5) Ductile Iron  |
| 6) N/A           |
| 7) Copper        |
| 8) Brass         |
| 9) Other         |

The pipe material screen will allow you to select the pipe material for the unit. Selections are: Carbon Steel, Stainless Steel, PVC, Ductile Iron, Copper, Brass and Other. If Other is selected you will need to enter the Sonic Velocity of the material.

After pressing the selected pipe material number desired, the program will automatically take you to the Pipe Schedules screen.

### Pipe Schedules:

The Pipe Schedules screen will allow the user to select the pipe schedule of the pipe material chosen. If the pipe schedule is not known select "Other" and the program will allow the user to enter the Pipe O.D. and the Wall Thickness for the application.

## >02) Program (Continued)

After pressing the selected pipe schedule number or entering the O.D. and wall thickness desired, the program will automatically take you to the Pipe Size screen.

### **Pipe Size:**

Press the appropriate number in front of the pipe size desired if the O.D. and pipe wall thickness has not already been entered.

After pressing the selected pipe size number desired the program will automatically take you to the Liner Material screen.

### **Liner Material:**

Selections are: 01) None, 02) Epoxy, 03) Glass, 04) Bitumastic, 05) Rubber, 06) Mortar, and 07) Other.

After pressing the selected pipe liner number desired the program will automatically take you to the Liner Thickness screen. If 01) None was selected the next screen will be the Fluid Type screen.

### **Liner Thickness:**

If a pipe liner has been selected enter the thickness of the pipe liner in the engineering units designated and press the Enter key. This will automatically take you to the Fluid Type Screen.

### **Fluid Type:**

The Fluid Type screen will allow you to select the fluid type of the media to be measured.

For water, wastewater and sewage select "01) Water". This selection will automatically take you to the Sensor shot type screen.

If the fluid is other than water select "02) Other". When using this screen you will need to enter the following fluid media information:

- Sonic Velocity of fluid in FPS (feet per second)
- Fluid Viscosity in Centipoise (Cp)
- Specific gravity of fluid

If the sonic velocity of the fluid is not known you may call Eastech Badger at 1-800-226-3569. We have a library of various fluids and the associated sonic velocities.

After entering the fluid parameters the next screen will be the Sensor Shot Type screen.

### **Sensor Shot Type:**

The Sensor Shot Type screen will allow the user to program for the sensor placement on the pipe. Selections are:

- 01) Zee Shot, sensors are mounted on opposite sides of pipe
- 02) Vee Shot, sensors are mounted on the same side of pipe
- 03) W Shot, sensors are mounted on the same side of pipe (usually 1"-3" pipe sizes).

### **Sensor Cable Length:**

There will be two screens to enter sensor cable length. The first screen will be for Sensor #1 and the second screen will be for Sensor #2. Simply type in the cable length used for each sensor.

This completes the 02) Sensor Install selection. To review the sensor separation go to Review Meter.

## >02) Program (Continued)

### >03 Totalizer

|                  |
|------------------|
| Totalizer Units: |
| 01) GAL          |
| 02) MET3         |
| 03) LTRS         |
| 04) IGAL         |
| 05) BARR         |
| 06) CUFT         |
| 07) ACFT         |

#### **Totalizer Units:**

Select the Totalizer Units desired by pressing the number designation in front of the selection. Available totalizer units are:

GAL (gallons)      MET3 (cubic meters)      LTRS (liters)  
IGAL (imperial gallons)      BARR (barrels)      CUFT (cubic feet)  
ACFT (acre feet)

After pressing the selected totalizer engineering units desired the displayed totalizer multiplier screen will appear.

#### **Totalizer Multiplier:**

The Totalizer Multiplier screen will allow the user to select the multiplier for the totalizer that is to be displayed on the main screen. The multiplier choices are:

- |            |            |
|------------|------------|
| 01) x .001 | 05) x 10   |
| 02) x .01  | 06) x 100  |
| 03) x .1   | 07) x 1000 |
| 04) x 1    | 08) x 10k  |

### >04) 4-20 Output:

This section will allow the user to:

- 01) Adjust
- 02) Fullscale (assign maximum flow and low flow shutdown)

#### **4-20 Output Assignment and Adjustment**

Selection 04 in the programming menu is the 4-20mA output and assignment adjustment. Press the 04 key to adjust or assign the 4-20mADC output.

|                  |
|------------------|
| 4-20 Loop Output |
| 01) Adjust       |
| 02) Fullscale    |

01) Adjustment: To adjust or calibrate the 4-20mADC for the flow output press the 01 key. To set full scale flow for 20madc press 02.

|            |          |
|------------|----------|
| >1) Up     | 2) Down  |
| .....      |          |
| >3) Coarse | 4) Fine  |
| >5) 4 mA   | 6) 20 mA |

To adjust Zero: Press the 5 key, the cursor arrow will appear before the 5) 4 mA line. Press the 3 key for coarse adjustment or the 4 key for fine adjustment. Now press the 1 key to adjust the mA upwards or the 2 key to adjust downwards.

To adjust Span: Press the 6 key, the cursor arrow will appear before the 6) 20 mA line. Press the 3 key for coarse adjustment or the 4 key for fine adjustment. Now press the 1 key to adjust the mA. upwards or the 2 key to adjust downwards.

## >02) Program (Continued)

Application  
Fullscale Flowrate

xxxx.x GPM

To assign the 20mADC full scale value press 02) Fullscale. The following screen will appear: Type in the desired full scale flow rate that is desired for the 20mADC. Press the Enter key.

The next screen is the **Application Flow Rate Shutdown** screen. This screen will allow the user to select a low flow shutoff for the display and the 4-20mADC output. Type in the low flow shutdown in the flow engineering units displayed. Press the enter key to return to the main menu.

## >05) Damping:

>05) Damping

This option will allow the user to select the damping or response time of the flow meter. Press the 05 on the keypad.

### Output Damping Adjustment

To adjust the 4-20mA output damping press the 7 key. This will allow the user to adjust the damping time. The damping times available are:

- |                |                 |
|----------------|-----------------|
| 01) None       | 04) 60 Seconds  |
| 02) 10 Seconds | 05) 120 Seconds |
| 03) 30 Seconds |                 |

Enter the number in front of the desired damping time.

## >06) Lost Signal:

### Lost Signal Setting

To adjust the Lost Signal Time. (This is how long the meter will hold the last value after losing the signal until failing to the Lost Signal 4-20 mADC assignment.)

To set the Lost Signal time press the 06) key. The lost signal times available are:

- |                |                |
|----------------|----------------|
| 01) 5 Seconds  | 05) 2 Minutes  |
| 02) 15 Seconds | 06) 4 Minutes  |
| 03) 30 Seconds | 07) 8 Minutes  |
| 04) 60 Seconds | 08) 16 Minutes |

After pressing the desired number, or ENTER key, the next screen to appear is the Lost Signal Action assignment. In this screen the user will select the default for the 4-20mADC output during a lost signal condition. The selections are:

- 01) Fail to Zero
- 02) Fail to Span
- 03) Hold last value

Press the number desired, this will return to the main program screen.

## >02) Program (Continued)

### >07) Flow Simulation:

#### Flow Simulation

The flow simulation screen will allow the user to check the user to simulate flow. Press the MENU key to return to the main program screen.

>08) N/A

>09) N/A

>10) N/A

### >11) Meter Factor

The meter factor screen will allow the user to either manually, or automatically, set zero offset.

01) Manual zero. To set zero offsets while fluid is flowing.

02) Auto zero. To set zero offset while at zero flow.

This concludes >02) Program menu functions.

### >03) Daily Sum

This function will allow the user to review the Daily Sum of the last eight days. To access the Daily Sum press the 03) key on the keypad.

Daily Sum: View the Average, Minimum and Maximum flows and the time of the event for the last eight days of flow. To view past days, press the “Down” key.

Press the ENTER key to return to the main program menu.

### >04) Set Clock

This selection will allow the user to set the time and date.

### >05) System Setup

>05) System Setup

The system setup option will allow the user to set up the Model 3000 for the following options:

**01) Language:** This will allow the user to select the language displayed in the model 3000. The options are: 01) English, 02) German, 03) Spanish.

**02) Display:** Choosing this feature allows the user to select the contrast of the display from 01) Highest to 08) Lowest. This feature also allows the user to display the back light, to turn it off or to program for a timed “off” if the key pad is not touched in a selected time interval.

## >05) System Setup (Continued)

**03) Comm Port:** This option will allow the user to set the baud rate, flow control and slave I.Ds of the RS-232 communications. The Comm. Objects is not utilized.

**04) N/A**

**05) N/A**

**06) Totals Reset:** This option will reset the totalizer to zero. Press 5 to begin.

**07) New Password:** This option will allow the user to change the password to enter into the QuikCal programming.

**08) Summary Reset:** This clears the Daily Summary memory.

### **09) Sensor Option:**

01) Sensor Power. This screen will allow the user to use Normal or a High transmit power. Most strap on sensors will use high power and the windowed spool sensor will use low power.

02) Sensor Polarity: This screen will allow the user to change the polarity of the sensors. If the wiring of the upstream and downstream sensor have been inadvertently reversed during installation choose the Reversed sensor polarity in this screen instead of rewiring the sensors.

**10) Meter Reset:** This option will reset all parameters to the factory defaults.

**11) New firmware:** This option will allow the user to upload any new firmware to the latest revision.

This completes the System Setup function menus in the 3000 structure.

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