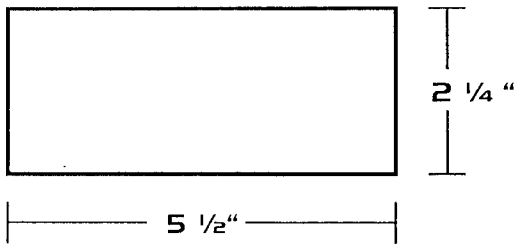
STEP ONE:
Location and Installation of Monitor Panel

NOTES: READ CAREFULLY

Choose a panel location that is convenient to see and reach and does not interfere with drawers, cabinets, existing wiring, etc. In choosing a location you must also give major consideration to the fact that wires must be routed from the panel to the holding tanks. MAKE CERTAIN the proposed wiring routes are not blocked by behind the wall stringers or other structural supports.

REFER TO FIGURE #1 and cut the panel opening as indicated. The panel will attach to the wall with 4 screws (not included), at the corners. Do no attach the panel to the wall until all other installation, calibration and testing has been completed.

FIGURE #1
Panel Cutout



STEP TWO:
Install Sensors Onto The Tank(s)

The sensors are comprised of two parts: The FOIL TAPE and the MODULE, (see illustrations on pages 1 and 2). Refer to Figure #2 and repeat the following steps for each tank.

A. Measure and cut to length two strips of foil tape. Each strip will run ½" from the top and ½" from the bottom of the tank or lowest water level. NOTE: Each strip of foil tape should be between 15 and 40 square inches, (multiply the length times the width), and it may be necessary to trim away or add to the tape width to stay within these figures.

If your tank is less than 8" tall and you are adding additional tape width, see Figure #2A.

C. Prepare the tank area where the foil tape is to be placed by rubbing down with common isopropyl alcohol.

IMPORTANT: The foil tape strips must be an inch or more away from large metal objects such as framework, metal siding, stored items, etc.

D. Remove the paper backing from the foil tape strips and place them against the tank. Smooth out any trapped air bubbles. Follow the dimensions on Fig. #2.

E. Remove the paper backing from the copper pads and from the module. Place a copper pad onto each of the two foil tape strips.

NOTES: The copper pads can be trimmed if they exceed the width of the foil tape; they can also be placed anywhere up or down the length of the tape. We recommend overspraying the installed foil pads with a non-conductive adhesive to protect the edges of the foil from snagging and curling up. 3M Spray77 is such an adhesive which is inexpensive and is available at most hardware stores or at Wal-Mart.

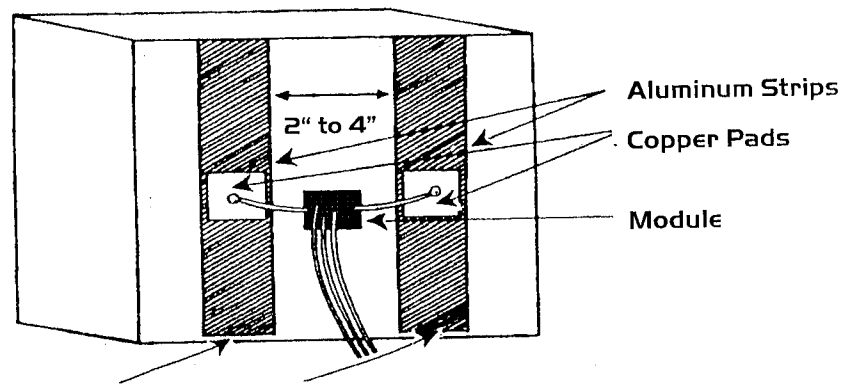


FIGURE #2

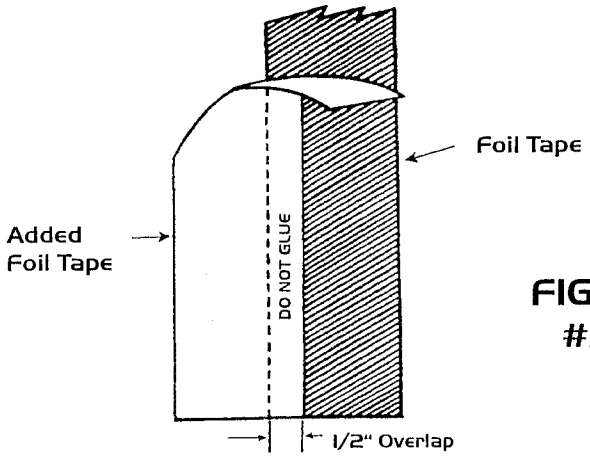


FIGURE #2A

STEP THREE:
Wiring Installation

NOTES: READ CAREFULLY. Do not use staples or nails to secure wiring. Also route wires so they do not interfere with storage areas and away from potential sources of heat (oven, exhaust pipes, etc.). Due to the vast range of application possibilities it is not practical for us to include hookup wire in the kit. It is however, commonly available and inexpensive. Use 18 gauge standard wire and make certain you have enough to perform all connections.

You will be using your hookup wire to make connections to a 12 volt D.C. power source and for connecting the panel to the tank(s). After studying the wiring installation procedures you can cut your hookup wire to required lengths, then strip the insulation on all wire ends approximately 1/4" and use the supplied butt connectors to join wires.

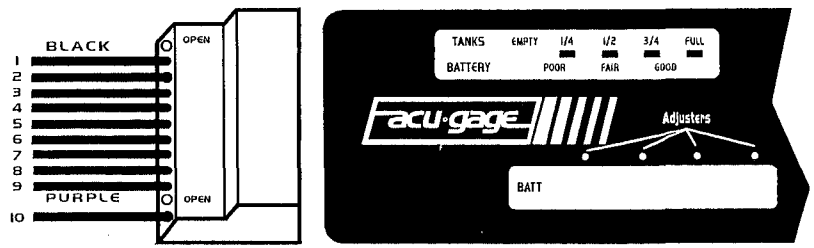
A. Take time to study Figure #3 ,"HOOKUP GUIDE"and page 9 for the color code. The first connections are made to wires 4 and 8. IMPORTANT: The other ends of these wires must also be identified as 4 and 8. Use an adhesive sticker or masking tape. These wires are then routed to the holding tank and wire 4 will connect to the red module lead and wire 8 will connect to the blue module lead. Repeat the procedures for your second or third holding tanks.

A fairly common 3 tank application is Button #1: Fresh; Button #2: Grey; Button #3: Black or Waste. Insulate the ends of any unused panel connector leads (except black and purple), with electrical tape.

B. Refer to Figure #4 and finish wiring by connecting wire 9, (purple), to 12 volt D.C. Positive, then wire 1, (black), together with all black module wires to 12 Volt D.C. Negative. If you are using more than one module, use the larger wire nut to accommodate the extra wires. NOTE: It is recommended that the power wires, (purple and black), be hooked to a battery voltage source. The 0.5 amp fused link is wired in line on the purple wire as shown in Figure #4.

If possible, avoid wiring to a convertor power source or to wires that power flourescent lights. This could result in electrical "noise" which may effect accurate panel readings.

FIGURE #3



Panel Connector

Panel

HOOKUP GUIDE

Wires 4 and 8 are controlled by Button 1
Wires 3 and 7 are controlled by Button 2
Wires 5 and 6 are controlled by Button 3
Wires 2 and 10 are controlled by Button 4
Wires 4,3,5 and 2 connect to red wires on modules
Wires 8,7,6 and 10 connect to blue wires on modules

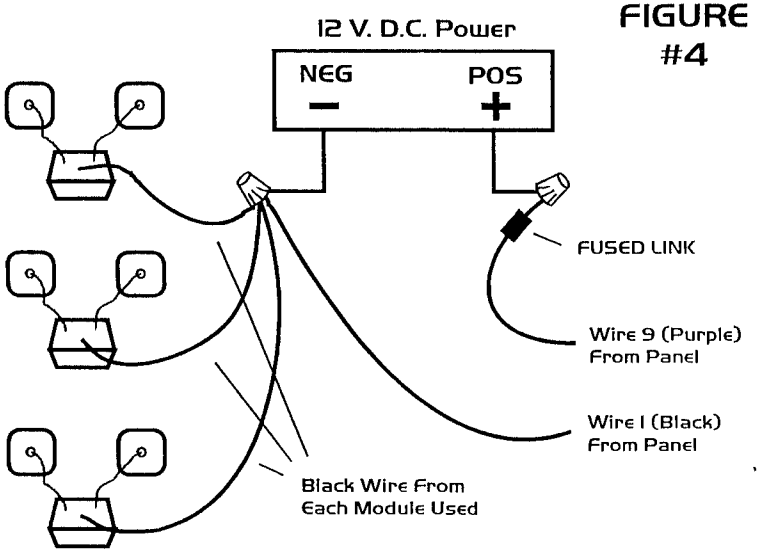


FIGURE #4

STEP FOUR:

Apply Button Indicator Stickers

You can customize your panel now by choosing from among the supplied adhesive button stickers. Place stickers on the gold bar below the adjuster holes.

STEP FIVE:

Testing and Calibration

Follow these procedures for each holding tank. Start with tank #1 (Button #1), which is usually your fresh water tank.

A. Fill tank with water.

B. Push the panel button for that tank. Use the adjuster tool and rotate the adjuster screw, (above the button), counter-clockwise until some of the tank designations turn off in sequence. Then slowly rotate the adjuster clockwise. Stop rotation right at the point the full reading comes back on steady (no flickering).
NOTE: If tank #1 is fresh water, you may be able to direct that water into the next tank by use of your pump system.

TROUBLESHOOTING

PROBLEM:
Tank is empty - panel reads ¼ full.

REMEDY:
A. The foil strips may extend below the tank's drain opening. Trim about ½" from the bottom of these strips.
B. Check for large metal objects in proximity to the foil strips. You may need to relocate the sensor system.
C. Re-calibrate - fill tank approximately 90% full and follow procedure in Step 5, Section B.

PROBLEM:
Tank level lights not operating.

REMEDY:
A. Using a voltmeter, make certain panel is receiving 12 volt power.
B. Check for proper ground connection.
C. Check ALL wire connections. Check fuse.

If remedies are not effective or if any other problem occurs, contact Snake River Electronics (Retain this book for future reference).

Notes: read carefully

Your kit may contain a module that will read diesel.
It measures 2" x 2" and is applied in the same manner.

The adjustments on the module itself are set and sealed at the factory.
Do not attempt to adjust the module.
Adjust at the panel level like all other modules.

acu·gage

MONITOR SYSTEM

INSTALLATION
INSTRUCTIONS
FOR

LM3-102

FOUR
TANK
CAPABLE

Congratulations on your purchase!

You have selected the best holding tank monitor system available. With proper installation you will enjoy years of accurate and trouble free operation.

FOR USE ON NON-CONDUCTIVE HOLDING TANKS,
(Polyethylene, Fiberglass, etc.)

SNAKE RIVER ELECTRONICS

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