

INSTALLATION INSTRUCTION

I SERIES TANK MONITOR SYSTEM

Thank you for your purchase!

Diamond's complete range of iSeries Monitors are designed to enhance tank efficiency and quality of life, while granting an easy, hassle free user monitor system.

PLEASE READ ALL INSTRUCTION BEFORE USING MONITOR

These installation instructions are written to have as universal an application as possible. Most installations are performed easily using simple hand tools. If you encounter any questions or difficulties please contact your place of purchase or your local RV/Marine service center for professional installation. Whenever the word CAUTION appears in these instructions, the following item needs to be performed EXACTLY as written. Failure to do so can result in injury to yourself or others, damage to your RV or Boat or failure of the Monitor to work properly. NOTE: Any alteration to the Monitor kit will void your warranty.

*****SAVE THESE INSTRUCTIONS*****

STEP ONE:

Location and installation of Monitor Panel:

CAUTION: READ CAREFULLY

Choose a panel location that is convenient to see and reach, and that does not interfere with drawers, cabinets, existing wiring, etc... In choosing a location you must also give major consideration to the fact the WIRES must be routed from the panel to the holding tanks. MAKE CERTAIN the proposed wiring routes are not blocked by 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 (included) at the corners.

DO NOT attach the panel to the wall until all other installation, calibration and testing has been completed.

PIGTAIL COLOR CODE AND HOOK-UP GUIDE

<u>DESCRIPTION</u>	<u>WIRE</u>	<u>COLOR /STRIPE</u>	<u>MODA COLOR</u>
TANK EIGHT	18	PINK/RED	RED
	17	PINK/BLUE	BLUE
TANK SEVEN	16	BROWN/RED	RED
	15	BROWN/BLUE	BLUE
TANK SIX	14	GREY/RED	RED
	13	GREY/BLUE	BLUE
TANK FIVE	12	GREEN/RED	RED
	11	GREEN/BLUE	BLUE
TANK FOUR	10	WHITE/RED	RED
	9	WHITE/BLUE	BLUE
TANK THREE	8	PURPLE/RED	RED
	7	PURPLE/BLUE	BLUE
TANK TWO	6	ORANGE/RED	RED
	5	ORANGE/BLUE	BLUE
TANK ONE	4	YELLOW/RED	RED
	3	YELLOW/BLUE	BLUE
GROUND -	2	BLACK	NONE
POWER 12VDC+	1	RED	NONE

STEP TWO

INSTALL SENSORS ONTO THE TANK(S):

NOTE: This section covers the installation of our external sensor modules. Sensors styles may vary and your particular sensor package might include sensors other than the external variety described here.

An external sensor is comprised of two parts: THE FOIL TAPE and the SENSOR MODULE. 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 $\frac{1}{2}$ " from the top of the tank and $\frac{1}{2}$ " from the bottom of the tank (or to the lowest water level). NOTE: Each strip of foil tape should be between 15 and 40 square inches (multiply the length times the width) it may be necessary to trim away or add to the tape width to stay within these parameters.
- B. If your tank is less than 8" tall and you are adding additional tape width, see **Figure #2 A** below.
- C. Prepare the tank area where the foil tape is to be placed by rubbing down the area with common isopropyl alcohol. Remove the paper backing from the foil tape strips and place them on to the tank in the designated areas. Smooth out any trapped air bubbles. Follow the dimensions on **Figure #2** below.

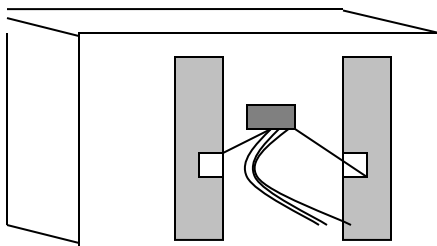
IMPORTANT: The foil tape strips must be an inch or more away from large metal objects such as framework, metal siding, stored items, etc...

- D. Remove the paper backing from the copper pads and from the module. Place a copper pad onto each of the two foil tape strips.
- E. Finally, apply a thin coating of 3M-spray, or any non-conductive adhesive over the top surface area of the exposed tape to ensure corrosion will not occur.

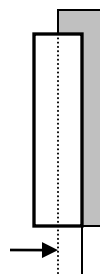
IMPORTANT: PROVIDE ADEQUATE VENTILATION WHEN APPLYING THE ADHESIVE, PARTICULARLY IF WORKING IS A CONFINED AREA.

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.

FIG#2



FIG#2A



STEP THREE

NOTE: READ CAREFULLY : “CAUTION” 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 of 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 ¼” and use the supplied butt connectors to join wires.

CONFIGURATION:

On initial power up or after pressing AND holding the Menu and ▲-UP Arrow keys, the screen then says “CONFIGURE TANKS”, the first thing that must be configured is which tanks are active in each system.

Tanks **1-4** are designed to drive and receive data from **MODA’S**.

Tanks **5-8** are designed for **LPG or 90 ohm** transducers or fuel tanks.

Tanks **1-8** are designed for **HIGH** and **LOW** level alarm settings.

Pressing the “OK” key will go to the screen for tank selection. Initial display is “_2345678”. The _ indicates the current tank. Pressing the ▲-UP Arrow will indicate that tank is in the system. Pressing the ▼-DOWN arrow will indicate that tank is not in the system, beneath each tank number is a Y or N to indicate whether or not a tank is in use. After pressing a ▲ or ▼ Arrows, the _ will move to the next position. After all tanks are in the system are selected, pressing the “OK” key will return to the configuration menu.

The screen should say “Configure: NAME”, pressing the “OK” key at this point will take you to tank name configuration, Pressing the “Menu” key will return to RUN mode, Pressing the ▲-UP Arrow key will scroll through the items that can be configured.

The next main configuration screen is “Configure: CALIB”, pressing the “OK” key takes you to a screen that shows the name of the first selected tank and 3 sets of numbers, The left hand number is the RAW data for the configured LOW level and the right number is the RAW data for the configured HIGH level. The center number is the current RAW data reading. Pressing the ▼-Down Arrow key will set the current data as the EMPTY level and pressing the ▲-UP Arrow will set the current reading as the FULL level. Pressing the “OK” key should take you to the next tank to be configured and pressing the “MENU” key should take you back to the main menu.

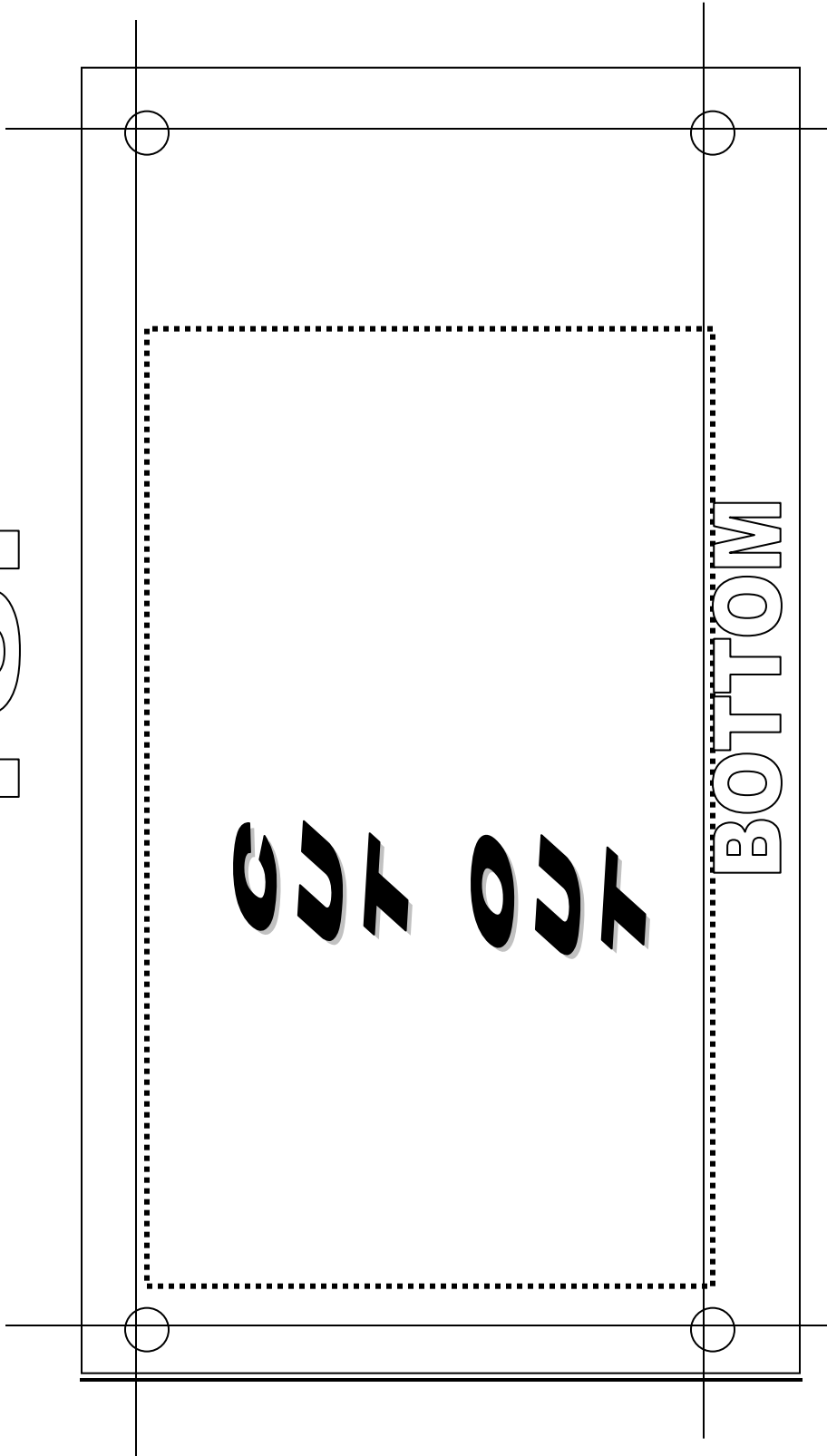
FRESH	WATER
111	222 333

ARE YOU SURE?
▲ = YES ▼ = NO

ALARM OPTION: When alarm sounds press the ▼-Arrow key and it will turn off alarm and reset the system to check at pre-designated timed intervals. To set alarm and time intervals refer to the configuration mode for “Alarm Settings”.

CUT OUT TEMPLATE

TOP



KIT INCLUDES:

ISERIES TANK MONITOR

TANK MODA SENSORS

FUESABLE LINK W/ 1/2A FUSE

WIRING CONNECTOR

ROLL FOIL TAPE

BUTT CONNECTORS

CUT OUT TEMPLATE FOR MONITOR

POSSIBLE TOOLS NEEDED FOR INSTALL:

DRILL

1/8" DRILL BIT

TAPE MEASURE

LEVEL

ELECTRICAL TAPE

BOX CUTTER/SCISSORS

VOLTAGE TESTER

HAND/JIG SAW

16 GUAGE WIRE

WIRE CUTERS

TROUBLE SHOOTING GUIDE

Factory affecting accuracy of readings and calibration:

The unit should be calibrated with the vehicle as close to level as possible. Depending on where the sensor strips are located on the tank, the readings may be somewhat sensitive to the pitch of the vehicle (due to the fluid sloshing either against or away from the sensor elements mounted to the tank wall). Keep this in mind when interpreting what otherwise might be a malfunctioning sensor or display.

Some tanks, particularly those mounted below the decks in boats, may be impossible to completely drain or may refill with a small amount of fluid after pumping out (due to fluid left in the drain plumbing, which may drain back into the tank). If you calibrated empty on such a tank when it was completely dry (as in a factory installation) it may read that there is some fluid in the tank even when pumped empty. If this is the case simply recalibrate the empty point after pumping out and allowing to "SETTLE" to an actual "EMPTY" level.

PROBLEMS & REMEDIES

PROBLEM:

- A) TANK CHANNEL ALWAYS READS FULL, EMPTY, OR NEVER CHANGES REGARDLESS OF LEVEL OF FLUID IN THE TANK.
- B) DISPLAY SCREEN READS "SENSOR NOT READING"

POSSIBLE CAUSES:

- 1) IMPROPERLY CALIBRATED TANK
- 2) DAMAGED WIRING BETWEEN THE DISPLAY AND SENSOR MODULE
- 3) DAMAGED OR IMPROPERLY INSTALLED SENSOR FOIL
- 4) DAMAGED SENSOR MODULE

TEST/REMEDY:

- 1) RECALIBRATE TANK FOR EMPTY AND FULL AND RECHECK
- 2) VISUALLY CHECK ALL OF THE WIRE BETWEEN THE SENSOR MODULE AND THE DISPLAY PANEL. CHECK THAT ALL WIRES ARE ATTACHED PROPELTY AND THAT THERE IS NO DAMAGE ALONG THE WIRE RUN. REPAIR ANY PROBLEMS FOUND AND RECHECK.

