



SEELEVEL I™
Tank Monitor Accessory

Model 744
Analog Interface Module
Product Description

For service and warranty information, refer to the tank monitor manual.



SEELVEL I™ Tank Monitor Accessory

**For Recreational Vehicles
Model 744-AIM**

Manual

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CHAPTER 1

SYSTEM OVERVIEW

The SeeLevel 744 Analog Interface Module is a microprocessor based module which converts the digital signals from a SeeLevel RV Tank Monitor display into individual 0 to 5 volt analog outputs. The display must have a digital interface output in order to send the signal to the Analog Interface Module. The module cannot communicate directly with the senders.

A tank level reading 0% on the display corresponds to 0 volts at the analog output, and 100% on the display corresponds to 5 volts at the analog output. All other percentages are a linear portion of 5 volts, for example, a tank level reading of 43% would give $0.43 * 5 = 2.15$ volts at the analog output.

The temperature output is scaled so that 0 volts is -48°C (-54.4°F) and 5 volts is $+80^{\circ}\text{C}$ (176°F). This gives a scale of 39.06mV per $^{\circ}\text{C}$, or 21.7mV per $^{\circ}\text{F}$. The following table gives some common temperatures and their corresponding analog voltages.

Temperature ($^{\circ}\text{C}$)	Temperature ($^{\circ}\text{F}$)	Voltage
-48	-54.4	0.00
-40	-40	0.31
-18	0	1.17
0	32	1.88
10	50	2.27
20	68	2.66
40	104	3.44
80	176	5.00

The internal resistance of each analog output is 1000 ohms, which provides electrical protection for the module if an output is momentarily shorted to ground or 12 volts. If the load resistance of the receiving system is less than 100,000 ohms, then the system will have to compensate for the drop in voltage due to loading. If the digital signal to the module is lost, all the analog outputs will revert to 0 volts within about 10 seconds. If any of the tanks or temperature shows an error on the display, then the corresponding

analog output will go to 0 volts. The tank monitor display automatically checks tank levels and temperature every 5 seconds and sends the information to the module, so the analog outputs are updated every 5 seconds as well.

The module is potted into a small enclosure measuring approximately 1-1/2" by 1-3/8" by 3/4", and connects to the RV wiring via a 9 pin connector. To mount the module, use an adhesive or double sided tape to fasten the module to a solid surface at a convenient location. Do not let the module hang by the wires. There are 6 analog outputs available, which may not all be used in any given application. Insulate any unused outputs to prevent short circuits which can damage the module. 12 volt power from the RV is required for operation, and current drain is less than 10mA. The following table shows the pigtail wire colors and their function:

Wire Color	Function
Red 18 gauge	+12V power input to module
Black 18 gauge	Ground
Purple	Digital input
Blue	Fresh water analog output
Gray	Gray water analog output
Brown	Black water analog output
Green	LPG analog output
White	Temperature analog output
Orange	Fourth water tank analog output



CHAPTER 2

SERVICE AND WARRANTY INFORMATION

The warranty will apply only if the warranty card shipped with the equipment has been returned to Garnet Instruments Ltd.

Garnet Instruments Ltd. warrants equipment manufactured by Garnet to be free from defects in material and workmanship under normal use and service for a period of one year from the date of sale from Garnet or an Authorized Dealer. The warranty period will start from the date of purchase or installation as indicated on the warranty card. Under these warranties, Garnet shall be responsible only for actual loss or damage suffered and then only to the extent of Garnet's invoiced price of the product. Garnet shall not be liable in any case for labor charges for indirect, special, or consequential damages. Garnet shall not be liable in any case for the removal and/or reinstallation of defective Garnet equipment. These warranties shall not apply to any defects or other damages to any Garnet equipment that has been altered or tampered with by anyone other than Garnet factory representatives. In all cases, Garnet will warrant only Garnet products which are being used for applications acceptable to Garnet and within the technical specifications of the particular product. In addition, Garnet will warrant only those products which have been installed and maintained according to Garnet factory specifications.

LIMITATION ON WARRANTIES

These warranties are the only warranties, expressed or implied, upon which products are sold by Garnet and Garnet makes no warranty of merchantability or fitness for any particular purpose in respect to the products sold. Garnet products or parts thereof assumed to be defective by the purchaser within the stipulated warranty period should be returned to the seller, local distributor, or directly to Garnet for evaluation and service. Whenever direct factory evaluation, service or replacement is necessary, the customer must first, by either letter or phone, obtain a Returned Material Authorization (RMA) from Garnet Instruments directly. No material may be returned to Garnet without an RMA number assigned to it or without proper factory authorization. Any returns must be returned freight prepaid to: Garnet Instruments Ltd, 284 Kaska Road, Sherwood Park, Alberta, T8A 4G7. Returned warranted items will be repaired or replaced at the discretion of Garnet Instruments. Any Garnet items under the Garnet Warranty Policy that are deemed irreparable by Garnet Instruments will be replaced at no charge or a credit will be issued for that item subject to the customer's request. If you do have a warranty claim or if the equipment needs to be serviced, contact the installation dealer. If you do need to contact Garnet, we can be reached as follows:

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Granbury, Texas, 76049
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