

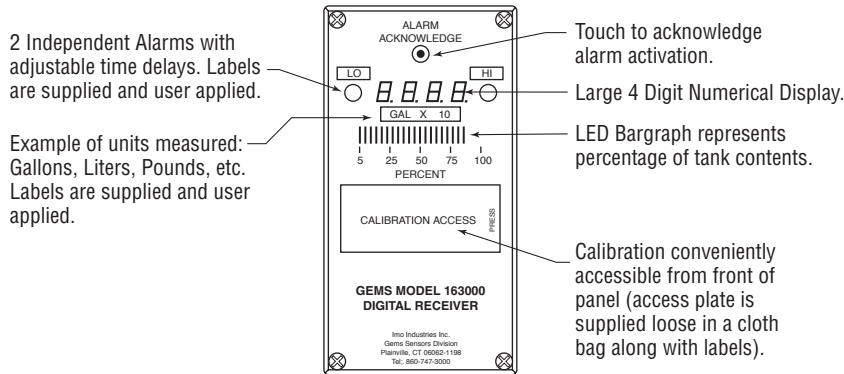
# Digital Bargraph Display Receivers - 163000 Series

Gems Digital Bargraph Receivers improve the way you are able to visualize the data being received from your liquid level transmitters. These new receivers display liquid level information in digital numerals in conjunction with a 0-100% LED bargraph readout. The numeric portion is a 1/2" 4-digit display that provides detailed quantification of tank contents, while the bright LED bargraph represents the tank contents as a bar length relative to the percentage of fluid volume within the tank.

If you have a non-linear tank, such as a sphere or a cylinder laying on its side, these receivers are a blessing. They can be calibrated easily so that the digital and bargraph displays will indicate accurate content information for "odd" shape tanks. See "Linearization" below.

In addition to the dual visual displays, the Gems Bargraph Receiver features two independent alarms with adjustable time delays, 10 amp auxiliary dry contacts and easy user set-up. The receiver is available in component form for mounting into custom enclosures or panels, or housed within a NEMA 4X enclosure.

LEVEL INDICATORS - VISUAL



## Linearization

Certain tanks, like a sphere or a cylinder laying on its side, are considered "Non-Linear" in terms of volume versus tank height. In these cases this receiver may be linearized according to your tank parameters so that the correct volume is displayed. Any units may be displayed by the receiver. Gallons, inches, tons, cubic inches, liters and etc.

The receiver uses a scheme where 9 points or 8 straight lines are used to calculate the numbers to be displayed. These 8 lines approximate the curve of the non-linear tank.

## Examples of Non-Linear Display Values.

1. Gallons in a spherical tank.
2. Gallons in a cylindrical tank laying down.
3. Pounds of liquid in a spherical tank.
4. Cubic meters in a conical shaped tank.
5. Gallons in a non-linear shaped tank.

**IMPORTANT: Customer must supply a sounding table, capacity curve and/or tank drawing for linearization of the digital bar graph display receiver.**

## Specification

Input Signal	4-20mA, Proportional Voltage*, Serial
Accuracy Over Given Range	± 1.0%
Operating Voltage	24VDC or 115VAC
Operating Temperature	-4°F to +140°F (-20°C to +60°C)
Alarm Contacts, Load	10Amp, Dry Contact
Digital Readout	0000 to 9999

\* Proportional voltage as produced by the non-signal conditioned Gems Liquid Level Transmitters (Section H and SureSite Transmitters (Section G).  
Note: Customer alarms (High & Low) set upon request.

## Panel Mounted Versions

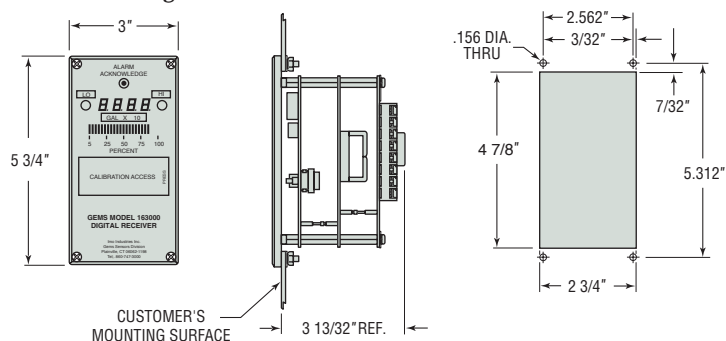


## Enclosed Versions



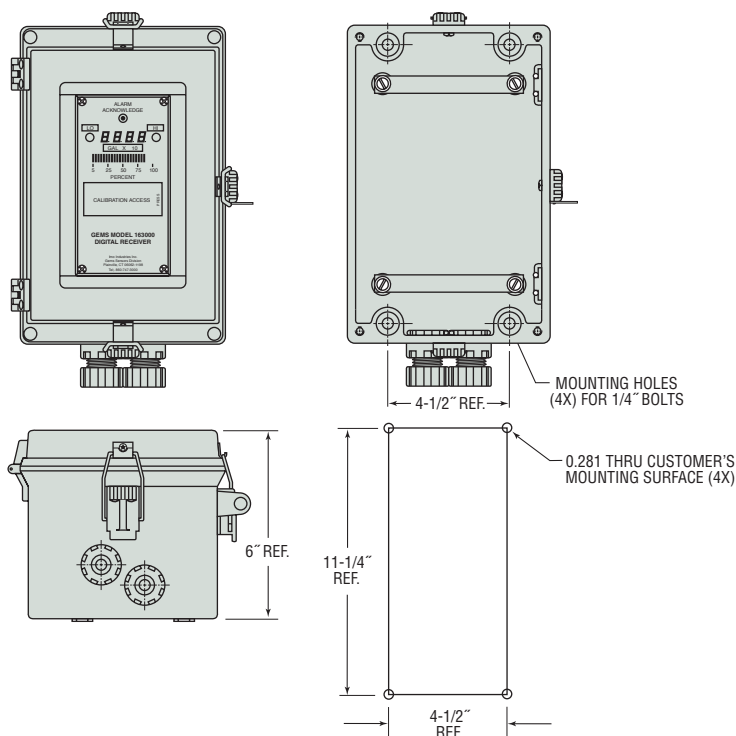
Dimensions

Panel Mounting Receivers

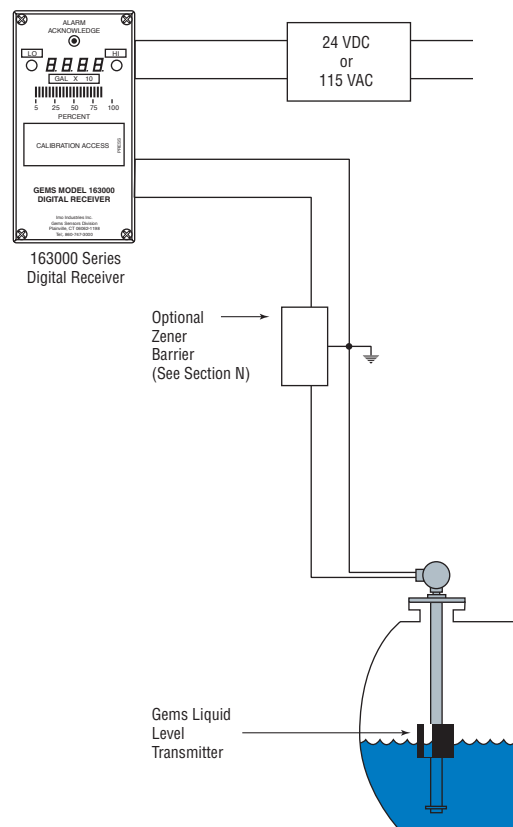


Static Sensitive.  
Handling Precautions Required.

NEMA 4X Enclosed Receivers



Typical Installation



How To Order - Standard

Select receiver type by Part Number based on Input Power and Input/Output Signals required.

Input Power	Input/Output Signals		Part Number	
	Input	Output	Panel Mount	NEMA 4X Fiberglass Enclosed
24 VDC	Transmitter*	None	170680-0100	170690-0100
	Serial	None	170681-0100	170691-0100
	Transmitter*	4-20mA	170682-0100	170692-0100
	4-20mA	4-20mA	170683-0100	170693-0100
115 VAC		None	170684-0100	170694-0100
	Transmitter*	None	170685-0100	170695-0100
	Serial	None	170686-0100	170696-0100
	Transmitter*	4-20mA	170687-0100	170697-0100
	4-20mA	4-20mA	170688-0100	170698-0100
	None	170689-0100	170699-0100	

\* Proportional voltage as produced by the non-signal conditioned Gems Liquid Level Transmitters (Sections C) and SureSite Transmitters (Section D). When used in conjunction with RE-163000, no additional signal conditioning required.