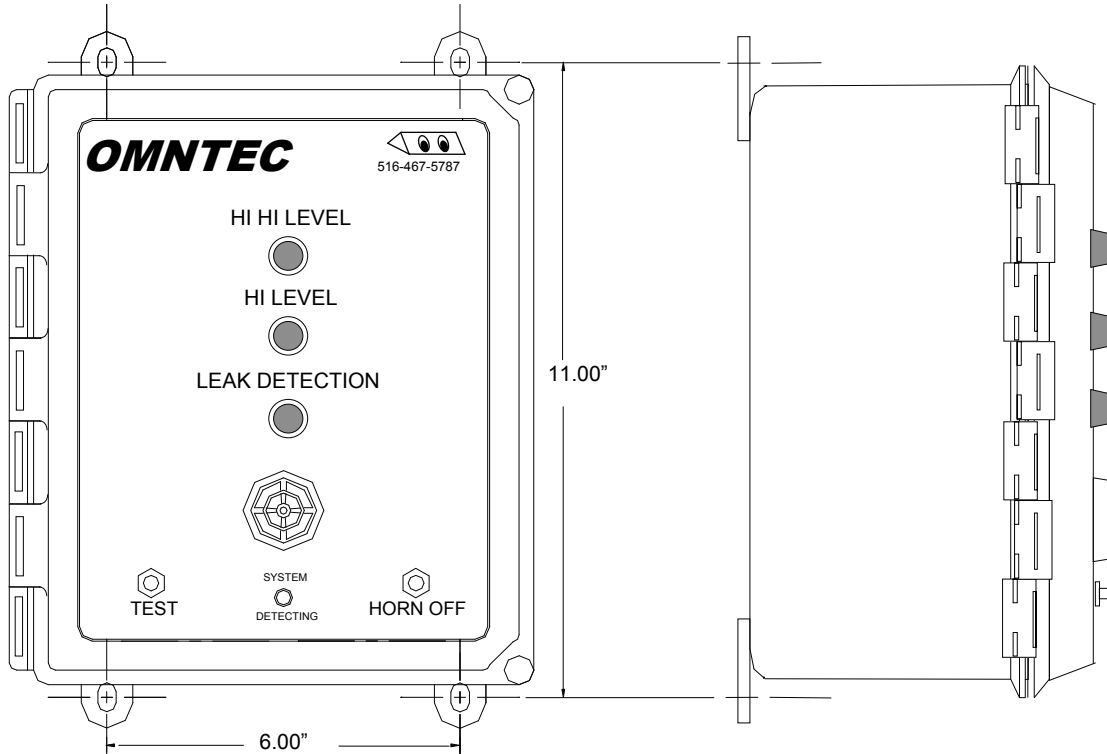


**THREE CHANNEL****SPECIFICATIONS****POWER INPUT**

85-125 VAC, 47-440 Hz  
16 Watts maximum

**POWER TO SENSORS**

13.80 VDC @ 13 ma

**RELAY OUTPUTS**

SPST normally open dry contacts 1.25 AMPS, 120 AC/DC switches when an alarm condition occurs

**WEIGHT      DIMENSIONS**

6 LBS.      (W) 9" x (H) 10.5"

**SENSOR CABLE**

Shielded 22 AWG UL-E118830 CM  
Maximum length 2000 feet

**ENCLOSURE      OPERATING TEMPERATURE**

NEMA 4X      -40° to 140° F

**AUDIO/VISUAL CONSOLE**

Audible alarm - 95 dB pulsing horn with 30 second timeout

RED light -Indicates liquid alarm for LF-series float sensor  
TEST BUTTON- When pressed will test system electronics

GREEN LIGHT- indicates the power is on

Horn off button - Silences the audible alarm when pressed

**SENSORS**

(1) LF-2-EX      Dual level liquid level float sensor, normally closed

(1) LS-ASC-EX      Non-distinguishing optic leak sensor

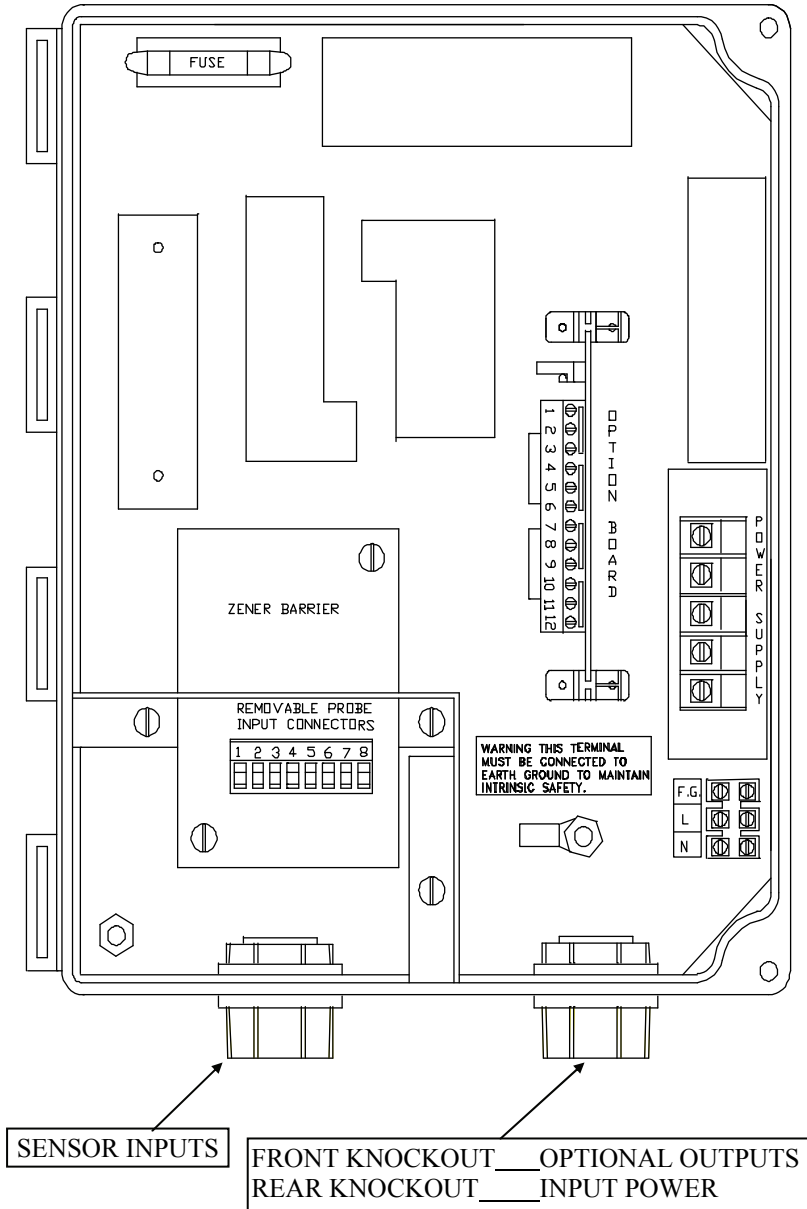
**ACCESSORIES**

RA-2 audio/visual remote annunciator

**LABELS**

Provided with controller

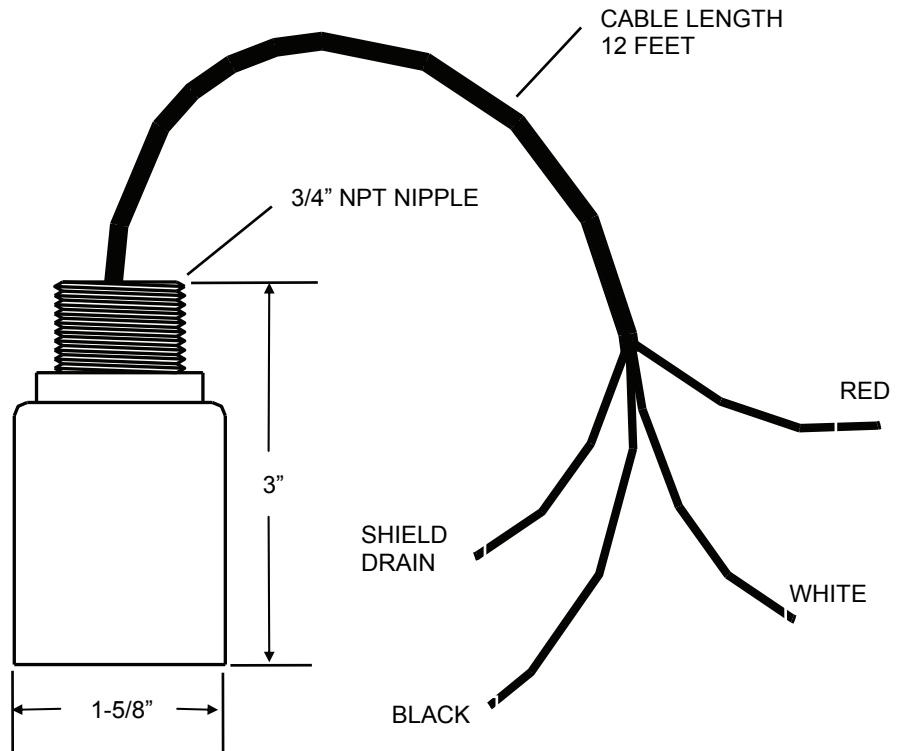
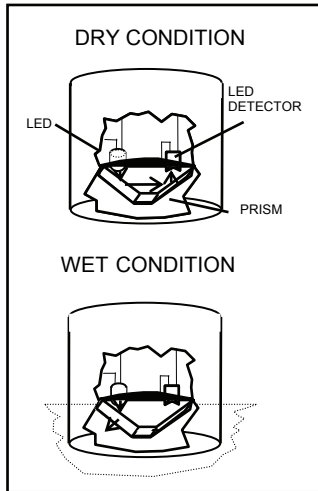
# ELP21LU3-LF-HHL CONTROLLER CONNECTION DIAGRAM



COLOR CODE		
<b>CABLES FROM SENSORS TO REMOVABLE SENSOR INPUT CONNECTORS</b>		
1	UNUSED	SENSOR #1
2	RED	LF-2-EX HI HI LEVEL
3	UNUSED	SENSOR #1
4	WHITE	LF-2-EX HI HI LEVEL
5	RED	SENSOR #2
6	WHITE	LS-ASC-EX LEAK DET.
7	BLACK	FROM SENSOR #1 & #2
8	SHIELD DRAIN	FROM SENSOR #1 & #2
<b>WIRES TO OPTION BOARD</b>		
<b>WIRES FROM RA-SERIES REMOTE</b>		
1	GREEN	-HORN
2	RED	+HORN
3	BLACK	GROUND
4	WHITE	SENSOR #1 HI HI LEVEL
5	ORANGE	SENSOR #1 HI LEVEL
6	BLUE	SENSOR #2 LEAK DET
<b>WIRES FROM RELAY OUTPUTS</b>		
7	COMMON	SENSOR #2
8	NORMALLY OPEN	LEAK DETECTION
9	COMMON	SENSOR #1
10	NORAMMLY OPEN	HI LEVEL
11	COMMON	SENSOR #1
12	NORMALLY OPEN	HI HI LEVEL
<b>120VAC</b>		
<b>WIRES TO POWER SUPPLY</b>		
F.G.	FIELD GROUND	
L	LINE	
N	NEUTRAL	

NOTE: To maintain proper shielding, BLACK sensor wires and SHIELD DRAINS should not be connected together at sensors.

## Non-product distinguishing Optic Sensor

**LS-ASC SPECIFICATIONS****U.L. LISTED 5L04**

Intrinsically safe Class I, Group D Hazardous Locations when connected in accordance with control drawing nos. L1, L2, L3, L4, L6, L9

**OPERATING TEMPERATURE**

-40 TO +140 F

**POWER**

2 VDC @ 13 mA

**WEIGHT**

1/2 pound

**PRINCIPLES OF OPERATION**

LIQUIDS (ex: fuel, water) – photo Optic  
 DRY CONDITION – Normally closed light beam  
 ALARM CONDITION – Opens (refracts) normally closed light beam

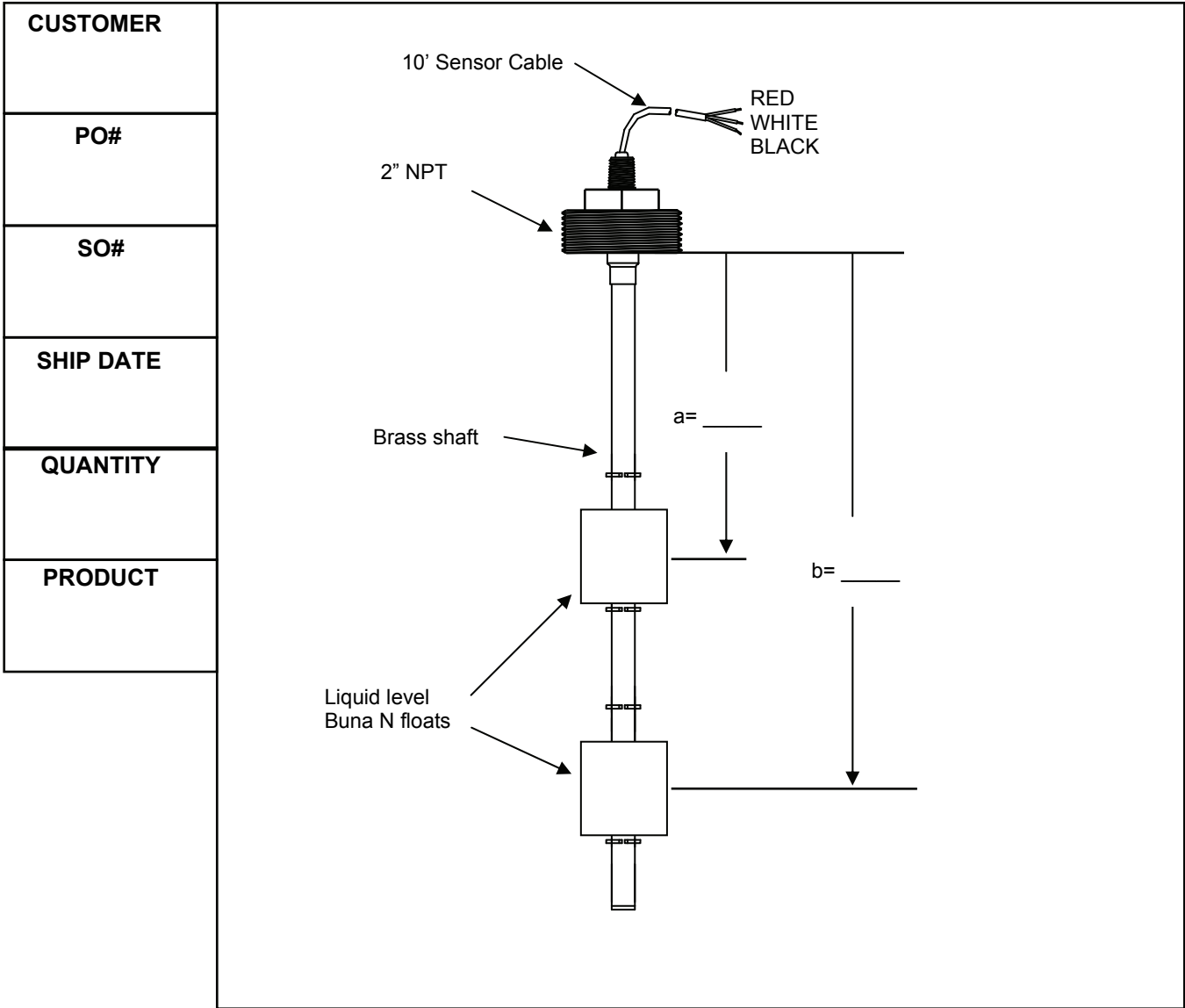
**SENSOR CABLE**

Shielded 22 AWG UL-E118830 CM  
 Maximum length 2000 feet

**RESPONSE TIME**

Immediate

# LF-2 Sensor Dimension Approval Sheet



a= Dimension for High Level in inches\*  
 b= Dimension Low Level or caution level in inches\*

\* - Be sure to take into account any riser pipes or manway risers.  
 - Dimensions should be calculated from the top of the tank or riser down to the required alarm level(s)

<b>Name:</b>	
<b>Company:</b>	
<b>Signature:</b>	
<b>Date:</b>	
<b><i>Signature is required to release product to production</i></b>	

## Liquid Level Float Sensors

- Stainless Steel or Brass Mountings
- 1 to 6 Actuation Levels
- Lengths to over 11 feet
- U.L. Recognized, CSA Listed

LF series float sensors have multiple options including material of construction, mountings and float sizes. This allows for the LF sensor to be extremely versatile in a wide range of applications such as water, oils, chemicals and corrosive liquid.

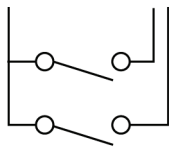
LF-\* switches are U.L. Approved for Class I, Division 2, Groups A, B, C, D hazardous locations. FM Approved explosion proof junction box must be installed for Class I, Division I, Group D hazardous locations.



Specifications		
	BUNA N	Stainless Steel
Operating Temperature	Water: to 180 F Oil: -40 F to +230 F	40 F to +300 F
Stem & Mounting Material	Brass	316 Stainless Steel
Max Length (Lo)	120" (305 cm)	
Float Stops*	Beryllium Copper	316 Stainless Steel
Compatible Controllers	Consult factory	
Approvals	U.L. Recognized, CSA Listed	

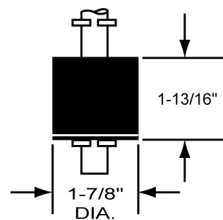
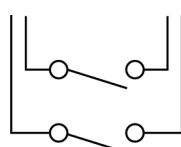
*Specifications subject to change without notice, verify with manufacturer.*

**Group 1**  
Switch (N.O. or N.C.):  
SPST: 20 VA



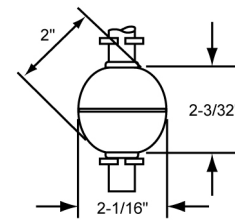
For clarity, only two actuation levels are shown in each group diagram.

**Group 2**  
Switch (N.O. or N.C.):  
SPST: 20 VA



**BUNA N Float**

Consult factory for materials other than stainless steel and BUNA N.



**Stainless Steel Float**

Switch actuation levels are determined following the guidelines below:

All units 72" or less overall unit length with Stainless Steel or Buna N floats.

**A** = 1-1/2" (38.1mm) minimum distance to highest level (2" (50.8mm), Type 5 only)

**B** = 2" (50.8mm) minimum distance from end of unit to lowest level

**C** = 3" (76.2mm) minimum distance between levels

**D** = 1/4" (6.3mm) minimum distance between actuation levels (Note: One float for two levels can be used only when low level is N.C. dry and high level is N.O. dry)

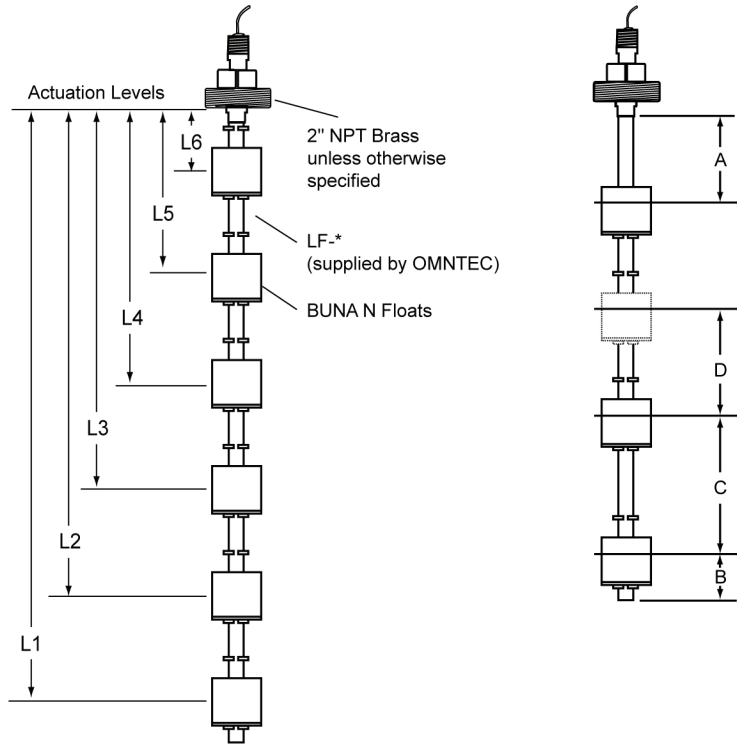
\* Actuation level distances and  $L_0$  (overall unit length) are measured from inner surfaces of mounting plug or flange

\*\* Length Overall  $L_0 = L_1 + \text{Dimension B}$ .

See mounting Types for Maximum Length values

**Notes:**

1. A, B and C dimensions based on a liquid specific gravity of 1.0
2. One float for two levels can be used only when 20VA switch is used
3. Actuation levels are calibrated on descending fluid level, with water as the calibrating fluid, unless otherwise specified
4. Tolerance on actuation levels is +/- 1/8" (3.2mm)

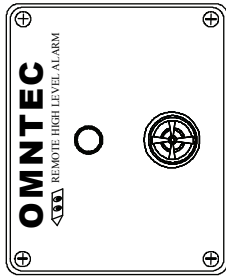


Wiring Color Code					
Wiring	Level 1	Level 2	Level 3	Level 4	Level 5
LF-1	black/red	-----	-----	-----	-----
LF-2	black/red	green/white	-----	-----	-----
LF-3	white/red	blue/green	black /orange	-----	-----
LF-4	black/red	green/white	blue/orange	yellow/brown	-----
LF-5	black/red	green/white	blue/orange	yellow/brown	purple/grey

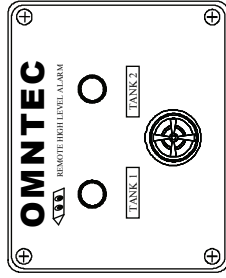
	Type 1 1/2" (12.7mm) NPT	Type 2 1-1/4" (31.8mm) NPT	Type 3 2" (50.8mm) NPT	Type 4 3" (76.2mm), 150# Dia. Flange
Stem and Mounting Material	Brass or 316 Stainless Steel			Flange: Carbon Steel or 316 S.S. Stem: 316 S.S.
Max Length	36" (91.4 cm)	60" (152.4 cm)	140" (355.6 cm)	
Mounting Position	Vertical 30 Inclination			
Float Stops*	Brass Units: Beryllium Copper Grip Rings, Stainless Steel Units: S.S. ARMCO PH-15-7MO Grip Rings			

# RA-Series Remote High Level Alarm

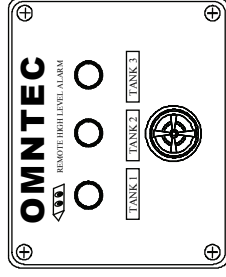
RA-1



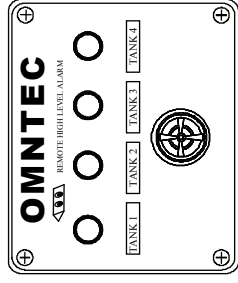
RA-2



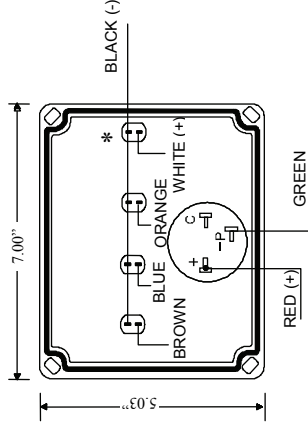
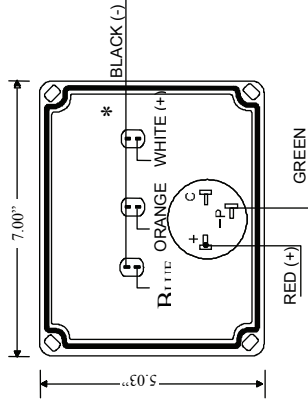
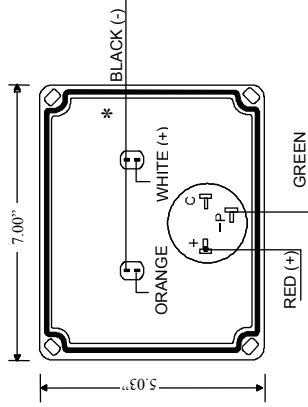
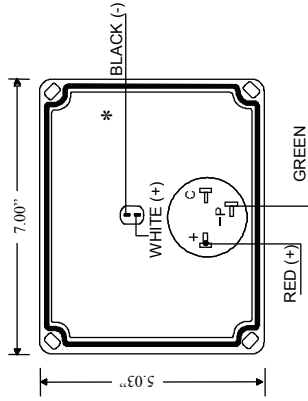
RA-3



RA-4

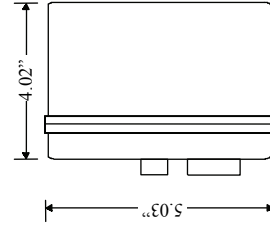


## Internal Wiring Color Code

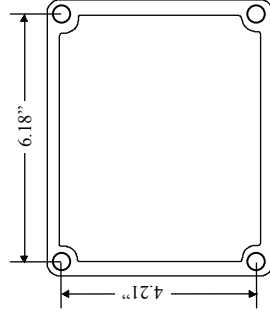


\* **WARNING LABEL PLACED HERE:** Warning: Low voltage inputs only

### SIDE VIEW



### MOUNTING DIMENSIONS



SPECIFICATIONS	
Audible Alarm	95 dB pulsing horn
Red Light	Liquid-high-level alarm
Response Time	Immediate
Power Input	12VDC @200mA maximum from controller
Wire	22 AWG minimum
Weight	1 lb.

Note: It is recommended that knockouts be placed in the bottom of the enclosure





## WARRANTY

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The seller OMNTEC Mfg., Inc. warrants to buyer, for one year: That all components meet specifications herein. All components are free of defects when properly installed, and maintained by user. The sellers sole obligation is to repair or replace parts found to be defective, or non-conforming after evaluation by factory. The liability of the seller shall not exceed the price paid for the components found to be defective. The above warranty is exclusive of all other warranties whether implied or expressed. Seller assumes no obligation for special or, indirect damages incurred by user.