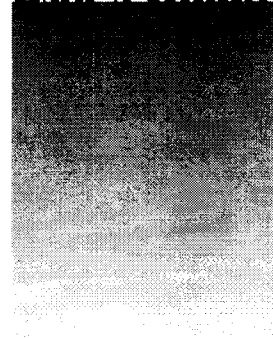


**3 YEAR**  
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# User's Guide



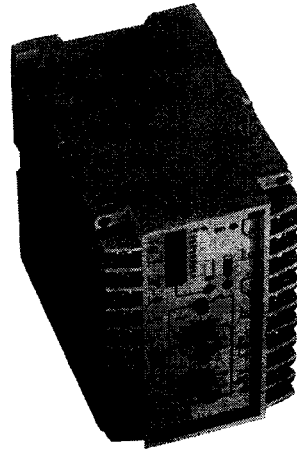
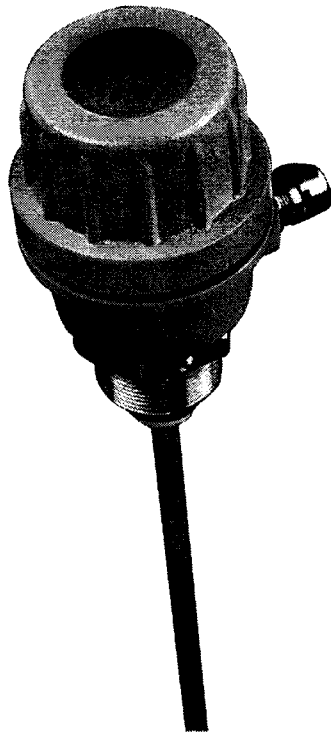
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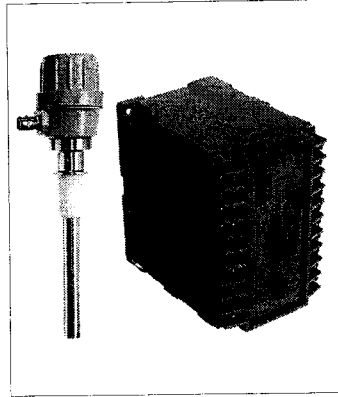
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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

**WARNING:** These products are not designed for use in, and should not be used for, human applications.

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**LV3000 Probe + LVCN410 Transducer**

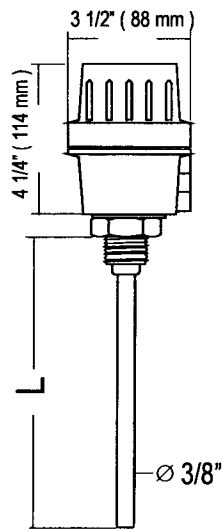
The LV 3000 probe controls and measures level along with the LVCN410 transducer. This system is also a RF capacitance transmitter for measurement of level in a variety of products. The LV3000 probe sends a mV signal to the LVCN410 transducer, that converts the mV into a 4-20mA signal.

The LV3000 working with the LVCN410 transducer has two adjustable level controls in a scale of 0-100% with a bar graph indication, 0-10VDC (optional) output, and Zero and Span adjustment.

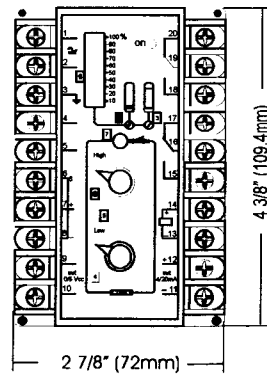
The LV3000 + LVCN410 as well as the other RF capacitive models have a wide range of applications; they can be used in conductive and non-conductive liquids, solids and slurries. For corrosive and ultra pure materials, rods can be coated with Teflon when necessary.

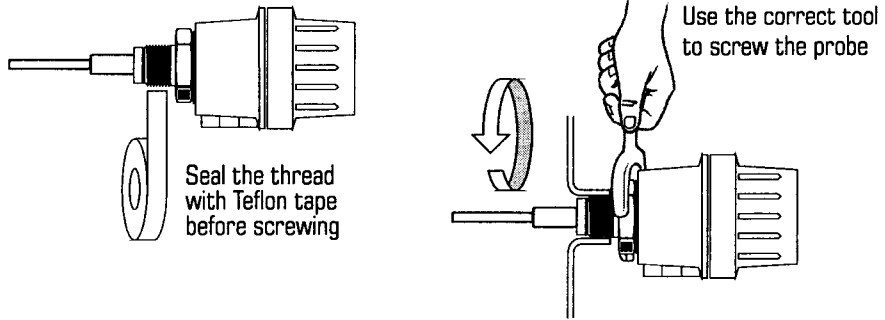
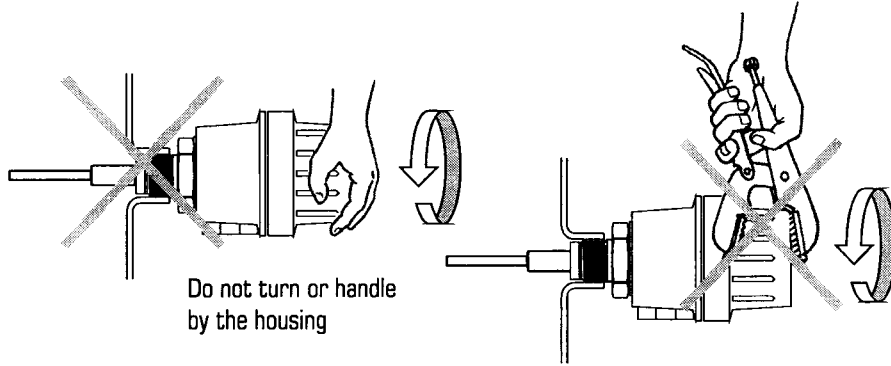
- Wide range of applications/industries such as:  
water, oils, corrosives, solids, powders, grains, etc.
- Functions on conductive as well as non-conductive medias
- No moving parts
- Rugged construction
- Unaffected by coating media or aggressive products
- Can operate at high temperatures and pressure

**LV3000**



**LVCN410**





### 1- Pre-Installation Checks:

- 1) Before installing the LV3000 probe and LVCN410 transducer, check that the wire connections are correct and that the available power supply is compatible according to the label shown.
- 2) Confirm that the operating pressure and temperature of the process corresponds to the indicated specifications of the model to be installed.

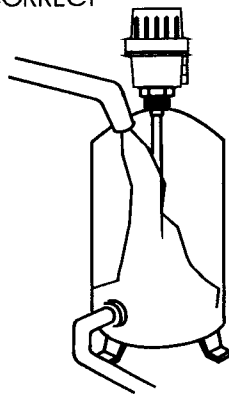
### 2- Installation:

The LV3000 level probe must be installed utilizing the type of connection provided. The tank must be free from turbulence or vortices throughout use. When tightening the probe only use the 316S.S. hexagon fitting to achieve a seal, do not twist with body of the probe.

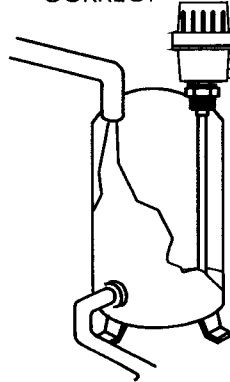
Note: As achieving proper seal is very important for high pressures and explosion proof applications, care should be taken when tightening the connection.

When installing the probe either directly to the tank, or utilizing a connection, the capacitance probe should be mounted on the top of the tank, so that the rod stays parallel to the tank wall. Positioning the probe closer to the tank wall than to the center of the tank and away from the point where the medium enters the tank is preferable (see drawing below). This will reduce the chance of false reading when the tank is being filled. It is important however, that the probe does not touch the tank wall or any structural elements within the tank. In addition, the probe should not be mounted where material can form a bridge between the rod and the tank wall.

INCORRECT

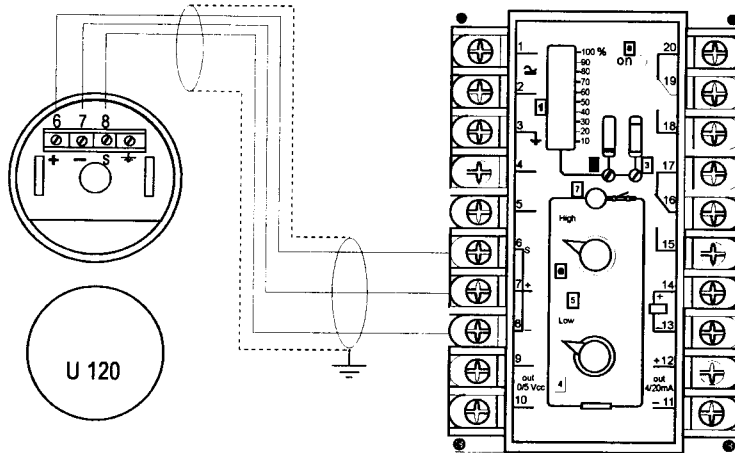


CORRECT



**LV3000 Probe**

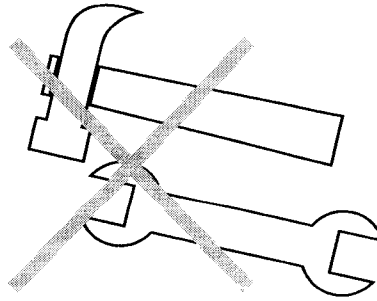
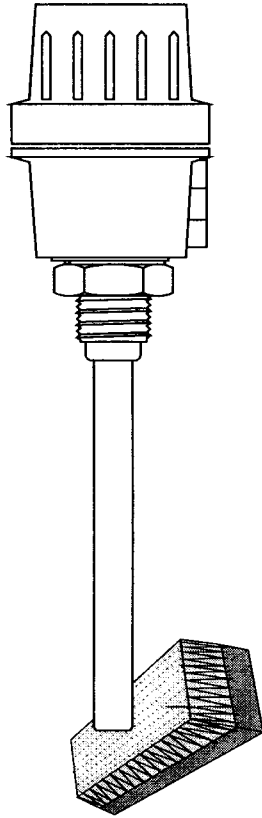
**LVCN410 Transducer**



- 1) Drain the tank to the minimum level (0% - level).
- 2) Use the Zero potentiometer to set the current value for the actual level to 4mA. Turn the potentiometer clockwise to increase current. Turn the potentiometer counter-clockwise to decrease current.
- 3) Fill up the tank to the maximum level (100% - level).
- 4) Use the Span potentiometer set the current value for the actual level to 20mA. Turn the potentiometer clockwise to increase current. Turn the potentiometer counter-clockwise to decrease current.

**PROBES:**

Care should be taken when cleaning coated rods to avoid scratching them.



When cleaning the rods use a soft brush or any other similar object.

MODELS	LV3000
Application	Continuous level measurement for liquids solids and granular
Operating Voltage	Relay LVCN410 110, 220 Vac (50/60Hz) 24 Vdc (+/- 10%)
Current Consumption	4 VA
Adjustment	Zero & Span and 2 Switch point Potentiometer
Sensitivity range	50 to 10000pF
Frequency oscilation	--
Output	2 Relay (SPDT) 5A max 250 Vac, 4...20mA (2 wires) and 0...5Vdc
Accuracy	0.5%
Repeatability	+/- 1mm
Level indication	Display bargraph
Electrical connection	1/2" or 3/4" NPT
Process connection	3/4" to 1 1/2" BSP or NPT flange or sanitary connections
Wetted material	316 SS
Enclosure material	Alluminum Explosion Proof
Max pressure	290 PSI (20 Bar)
Operating temperature	Probe: 14 to 248°F (-10 to 120°C) Relay: 14 to 140°F (-10 to 60°C)
Class Protection	Probe: IP 65 Transducer: IP 40

Fault	Cause	Solution
Does not signal	No power Wrong connection	Check power supply Check the polarity of the power
The signal is over than 22mA	Capacitance short	Check if the probe is coated for conductive mediums
The signal is not fixed	Noise output	Check the ground connection





## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

**OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.**

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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