

# User's Guide



*<http://www.omega.com>  
e-mail: [info@omega.com](mailto:info@omega.com)*

**LD310 Series**  
ST and HT Series



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**Servicing North America:**

USA:  
ISO 9001 Certified One Omega Drive, Box 4047  
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Tel: (203) 359-1660 FAX: (203) 359-7700  
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**Servicing Europe:**

Benelux:  
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Czech Republic:  
ul. Rude armady 1868, 733 01 Karvina-Hranice  
Tel: 420 (69) 6311899 FAX: 420 (69) 6311114  
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France:  
9, rue Denis Papin, 78190 Trappes  
Tel: (33) 130-621-400 FAX: (33) 130-699-120  
Toll Free in France: 0800-4-06342  
e-mail: [france@omega.com](mailto:france@omega.com)

Germany/Austria:  
Daimlerstrasse 26, D-75392 Deckenpfronn, Germany  
Tel: 49 (07056) 3017 FAX: 49 (07056) 8540  
Toll Free in Germany: 0130 11 21 66  
e-mail: [info@omega.de](mailto:info@omega.de)

United Kingdom:  
ISO 9002 Certified One Omega Drive, River Bend Technology Centre  
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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, patient-connected applications.**

## **DESCRIPTION**

The ST and HT range of high reliability L.V.D.T.'s are shielded from electrostatic and electromagnetic interference by magnetic stainless steel casing and end plates.

Because the manufacturing process is fully understood and is of the highest standard, this results in the cores being interchangeable with no specific orientation.

High output voltage over a large frequency range and large core to bore clearance are major features of this L.V.D.T.

The design is splash proof, but may not be suitable for complete immersion.

## **INSTALLATION**

L.V.D.T. transducers generally are a reliable and proven technology that is well established in all areas of manufacturing and control industries. The majority of the associated problems experienced with their application and use are totally avoidable, particularly if sufficient thought is given during the initial design stages of equipment, to the positioning and clamping methods employed for these feedback elements.

L.V.D.T.'s being of inductive nature are susceptible to some degree to the influence of magnetic fields and therefore should be positioned well away from electric motors, relays and permanent magnets, where this is not possible then magnetic shielding should be considered as an alternative.

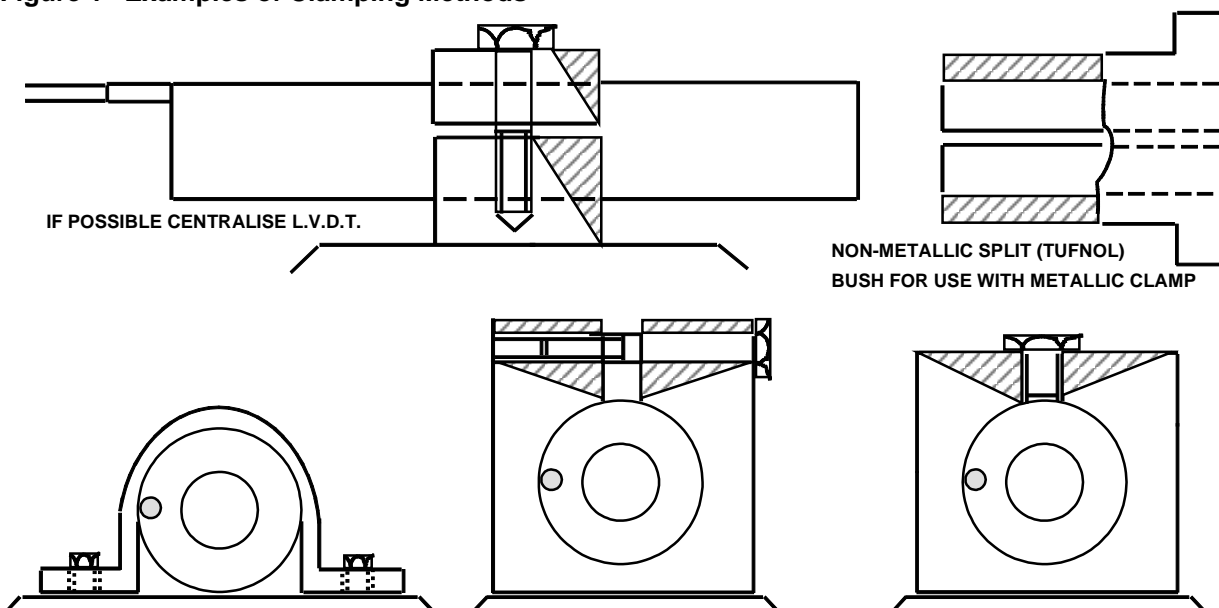
Clamping of the coil assembly should be carefully considered, some example methods are shown overleaf. Ideally the body of the transducers should be clamped centrally in a pinch or yoke type clamp, manufactured from a low conductivity, non-magnetic material, if this is not possible then the introduction of a non-metallic bush between body and clamp is a preferred alternative.

Irrespective of clamping method care must be taken not to overtighten retaining screws as distortion of the body may prove damaging to the integrity of the transducer and adversely effect the geometry of the installation.

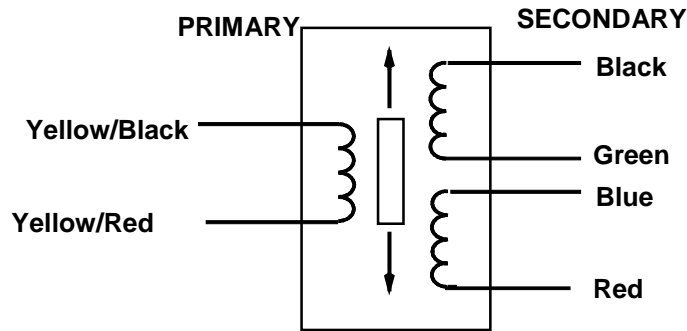
If the L.V.D.T. is to be mounted on equipment subject to high "g" then dependent on the direction of these forces, it may be advantageous to consider end to end clamping in preference to over body clamping.

The magnetic core supplied with each transducer has been manufactured and heat treated to achieve the optimum magnetic performance, any subsequent handling of the core which results in stress being imparted will render the calibration void, this includes overtightening of the core during installation onto its carrier. Hand tightening and retention by means of a suitable thread locking anaerobic retainer is the recommended procedure.

**Figure 1 Examples of Clamping Methods**



**Figure 2 Electrical Connections**



Connect Blue to Green or Black to Red for differential output.

Calibrated frequency, voltage load  
 2.5kHz 3 volts rms 100kΩ

Yellow/Red and Red are in phase for forward displacement (toward cable end).

Note: Fit "Quad Balance" resistor if supplied, between Red/Blue or Black/Green, as directed, in order to optimise linearity around null.

**CARRIERS**

A standard length carrier is available for each model of transducer, manufactured from 316 stainless steel and incorporating an 6-40UNF x 0.39" (10mm) long male thread for attachment to the standard core and an M4 x 0.027" x 0.78" (0.7 x 20mm) or 6-40UNF male thread for attachment to the fixture.

**CABLE**

The standard termination is by 7/0.125 P.T.F.E. insulated flying leads, capable of withstanding the operating temperature of the L.V.D.T.

Routing of cables should be kept as smooth as possible avoiding burrs, sharp edges and excessive cable loads.

**ENVIRONMENTAL**

	ST	HT
ST(HT) Operating Temperature Range	-67°F/+302°F (-55°C/+150°C)	-67°F/+392°F (-55°C/+200°C)
ST(HT) Storage Temperature Range	-67°F/+302°F (-55°C/+150°C)	-67°F/+392°F (-55°C/+200°C)

Conditions of high humidity and vibration should be avoided.

## 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 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.

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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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