1 YEAR
WARRANTY

CE

User's Guide

Shop online at

omega.com®
OMEGA®

omega.com
e-mail: info@omega.com
For latest product maunuals:
omegamanual.info

ISO 9001 CERTIFIED CORPORATE QUALITY
STAMFORD, CT

ISO 9002 CERTIFIED CORPORATE QUALITY
MANCHESTER, UK

LV850
Level Sensor

omega.com®
OMEGA®

OMEGAnet® Online Service www.omega.com	Internet e-mail info@omega.com

Servicing North America:

USA:
ISO 9001 Certified
One Omega Drive, Box 4047
Stamford CT 06907-0047
Tel: (203) 359-1660 FAX: (203) 359-7700
e-mail: info@omega.com

Canada:
976 Bergar
Laval (Quebec) H7L 5A1, Canada
Tel: (514) 856-6928 FAX: (514) 856-6886
e-mail: info@omega.ca

For immediate technical or application assistance:

USA and Canada: Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA®
Customer Service: 1-800-622-2378 / 1-800-622-BEST®
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN®
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

Mexico: En Español: (001) 203-359-7803 e-mail: espanol@omega.com
FAX: (001) 203-359-7807 info@omega.com.mx

Servicing Europe:

Benelux:
Postbus 8034, 1180 LA Amstelveen, The Netherlands
Tel: +31 (0)20 3472121 FAX: +31 (0)20 6434643
Toll Free in Benelux: 0800 0993344
e-mail: sales@omegaeng.nl

Czech Republic:
Frystatska 184, 733 01 Karviná, Czech Republic
Tel: +420 (0)59 6311899 FAX: +420 (0)59 6311114
Toll Free: 0800-1-66342 e-mail: info@omegashop.cz

France:
11, rue Jacques Cartier, 78280 Guyancourt, France
Tel: +33 (0)1 61 37 2900 FAX: +33 (0)1 30 57 5427
Toll Free in France: 0800 466 342
e-mail: sales@omega.fr

Germany/Austria:
Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
Tel: +49 (0)7056 9398-0 FAX: +49 (0)7056 9398-29
Toll Free in Germany: 0800 639 7678
e-mail: info@omega.de

United Kingdom:
ISO 9002 Certified
One Omega Drive, River Bend Technology Centre
Northbank, Irlam, Manchester
M44 5BD United Kingdom
Tel: +44 (0)161 777 6611 FAX: +44 (0)161 777 6622
Toll Free in United Kingdom: 0800-488-488
e-mail: sales@omega.co.uk

Please follow these installation, connection and adjustment instructions carefully. Failure to comply with these instructions or misuse of this equipment will void your warranty.

 Equipment installation, connection and adjustment by qualified personnel only!

NOTES:

1 Description

Level Sensor LV850 is suitable for liquids with low relative dielectric constant ε_r (e.g. oil). Units come with Minimum and Maximum selector switch.

It operates on the principle of electrical capacitance changes arising when an electrode surrounded by air is immersed in the medium.

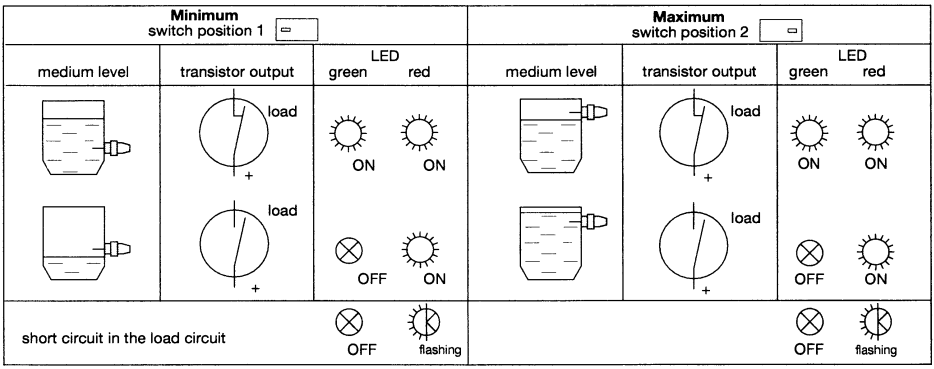
- LED status display
- Selection of minimum and maximum function by changeover switch.

  Minimum switching

  Normally the sensor is immersed and the green LED indicates. As the level drops below the sensor the green LED extinguishes.

  Maximum switching

  Normally the sensor is not immersed and the green LED indicates. As the level rises above the sensor the green LED extinguishes.
- In the event of a short-circuit in the load circuit, the green LED will extinguish and the red LED will flash.



2 Technical Data

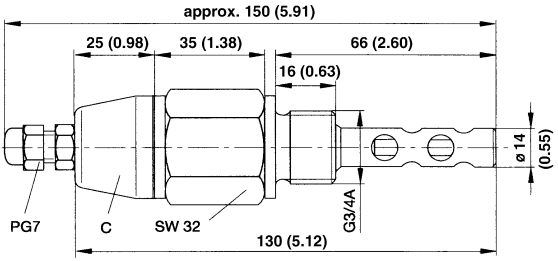
Temperature range	-20°C to +130 °C (-4°F to +266°F)
short-time	to +150°C (+302°F)
Ambient temperature	-20°C to +85°C (-4°F to +185°F)
Pressure resistance	max. 25 bar (367.5 PSI)
Response delay	approx. 0.1 s
Degree of protection	IP 65
Input voltage	DC 9 ... 36 V

Option:

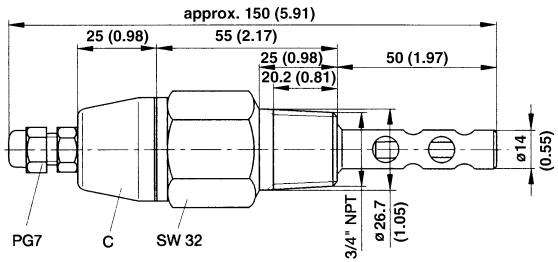
- metal coupling for pipe extension (see fig. 2) if the sensor is to be used as an immersion sensor

CE mark to demonstrate compliance with applicable directive

LV850 with G3/4A thread



LV850 with 3/4"NPT thread



DIMENSIONS mm (in.)

Fig. 1

3 Level Sensor Installation

NOTE

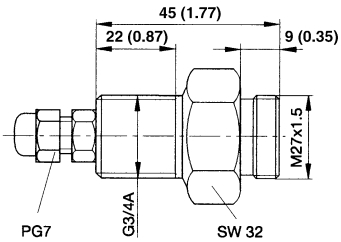
The Level Sensor may be installed in any attitude.

1. Ensure sufficient clearance space (see Fig. 1) in the container wall.
- Ensure a type 3/4" NPT or G3/4A thread in the container wall has been provided.
2. Screw the Level Sensor into the threaded aperture using a recognized sealing material.
3. When tightening the level sensor please use the flats provided (SW32).

CAUTION

Do not overtighten.

Metal coupling (option)



DIMENSIONS mm (in.)

Fig. 2

4 Connection

CAUTION

Check that the supply voltage corresponds with the voltage rating shown on the system.

1. Loosen the gland (PG7)(see Fig. 1).
2. Unscrew the cover of the housing (C).
3. Feed the supply cable through the gland (PG7) and the cover (C), or through the metal coupling supplied as option (see Fig. 2).
4. Connect the cable to the terminal block (TB) (see Fig. 3).
5. Set selector switch (S) to minimum or maximum:
   1. - minimum
   2. - maximum
6. Connect the supply voltage. LED (red) indicates.

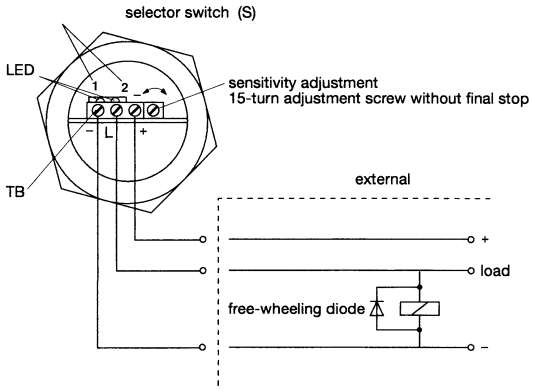


Fig. 3

7. Increase the level until the Level Sensor is immersed in the medium.
8. Minimum Sensor:

- Turn the potentiometer screw (E) to (-) until the LED (green) extinguishes. Then slowly turn to (+) until the LED indicates. Adjust the screw a further full turn to (+) to compensate for any tolerance.

9. Maximum Sensor:

- Turn the potentiometer screw (E) to (+) until the LED (green) extinguishes. Then slowly turn to (-) until the LED indicates. Adjust the screw a further full turn to (-) to compensate for any tolerance.

10. Replace and tighten the cover (C) or the metal coupling (option).
11. Replace and tighten the cable gland nut (PG7).

The Level Sensor is now connected, adjusted and ready for operation.

5 Operating Difficulties

Problem: The Level Sensor fails to operate correctly.

Solution:

- The surface of the sensor probe should be carefully cleaned from inside the container.

NOTES:

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.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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.

OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

Shop online at www.omega.com

TEMPERATURE

- Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
- Calibrators & Ice Point References
- Recorders, Controllers & Process Monitors
- Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- Transducers & Strain Gages
- Load Cells & Pressure Gages
- Displacement Transducers
- Instrumentation & Accessories

FLOW/LEVEL

- Rotameters, Gas Mass Flowmeters & Flow Computers
- Air Velocity Indicators
- Turbine/Paddlewheel Systems
- Totalizers & Batch Controllers

pH/CONDUCTIVITY

- pH Electrodes, Testers & Accessories
- Benchtop/Laboratory Meters
- Controllers, Calibrators, Simulators & Pumps
- Industrial pH & Conductivity Equipment

DATA ACQUISITION

- Data Acquisition & Engineering Software
- Communications-Based Acquisition Systems
- Plug-in Cards for Apple, IBM & Compatibles
- Datalogging Systems
- Recorders, Printers & Plotters

HEATERS

- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments

M3808/0504