Tuning Fork Sensor

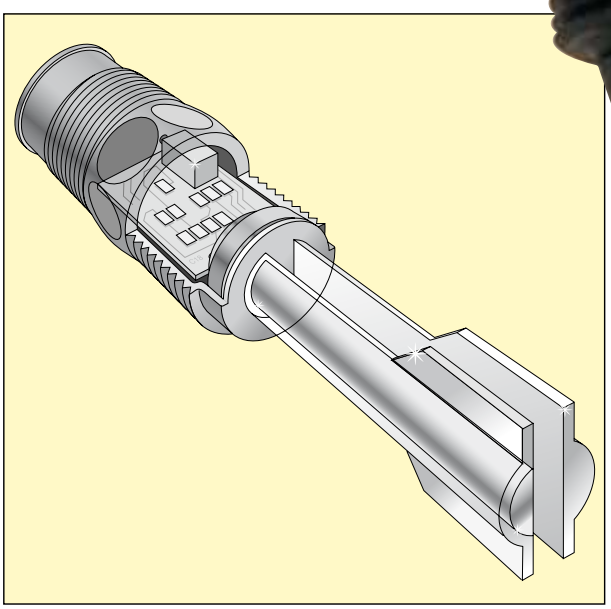
LTU-101A-R

2 YEAR WARRANTY

- **All Plastic Design Works in a Wide Variety of Applications**
- **Not Bothered by Foam or Bubbles**
- **SPST Relay Standard**
- **Excellent for Use in Food, Pharmaceutical, and Wastewater Applications**
- **NEMA 6 (IP68) Submersible Sensor and Cable**
- **Works with Liquids and Slurries**

Specifications

Accuracy: ±1 mm (0.04") in water
Repeatability: ±0.5 mm (0.02") in water
Frequency: 400 Hz
Supply Voltage: 12 to 28 Vdc
Consumption: 25 mA maximum
Relay: 60 VA, 1 A maximum
Switch Output: SPST
Selectable NO or NC states
Temperature Range:
-40 to 80°C (-40 to 176°F)
Pressure Range: 150 psi (10 bar) @ 25°C (76°F); derated @ 1.667 psi (0.113 bar) per °C above 25°C (76°F)
Probe Material: Ryton®
Probe Rating: NEMA 6 (IP68)
Mounting Threads: ¾ NPT
Cable Type: 3 m (10'), 5-wire, shield and PP jacket
Max. Cable Run: 305 m (1000')
Dimensions: 114 x 27 mm (4.5 x 1.05"), ¾ NPT or ¾ G



LTU-101A-R shown larger than actual size.

The LTU-101A-R consists of a sensor with dual tuning forks which are vibrated at a high frequency. As the tuning fork is progressively covered by a liquid, a shift in frequency occurs which activates the relay output. The tuning fork sensor is often used in conditions where there may be frequent composition changes in the liquid. Factory calibration ensures accuracy over a wide range of liquids, including lubricating oils and hydraulic fluids.

To Order	
Model No.	**Description**
LTU-101A-R	Tuning fork sensor, Ryton® ¾ NPT
LTU-101A-G-R	Tuning fork sensor, Ryton® ¾ G

Comes complete with operator's manual, CE compliance.

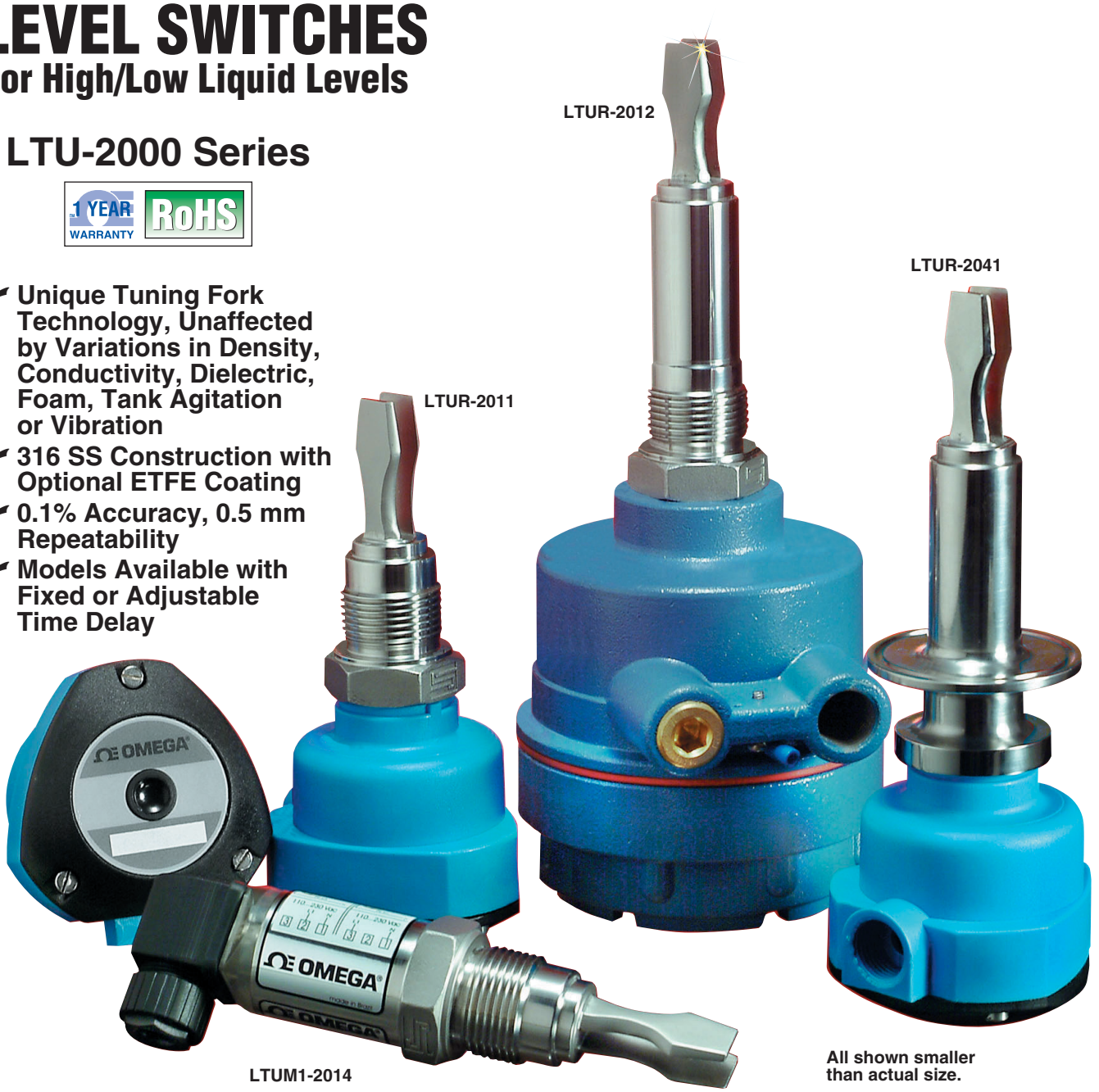
LEVEL SWITCHES

For High/Low Liquid Levels

LTU-2000 Series

1 YEAR WARRANTY RoHS

- Unique Tuning Fork Technology, Unaffected by Variations in Density, Conductivity, Dielectric, Foam, Tank Agitation or Vibration
- 316 SS Construction with Optional ETFE Coating
- 0.1% Accuracy, 0.5 mm Repeatability
- Models Available with Fixed or Adjustable Time Delay



LTUM1-2014

All shown smaller than actual size.

The LTU-2000 Series tuning fork level switches are point level switches that detect high or low liquid levels. Based on the vibrating tuning fork principle, these units accurately detect contact with a liquid, triggering a switching output. Depending on the liquid viscosity, the LTU-2000 is virtually immune to chemical or physical properties, and can be installed at any angle into a pipe or tank. Recalibration is not required between batches, and units may be cleaned in place. Models are available with PNP, NPN or relay.

Model	LTUP	LTUR	LTUM1	LTUM2
Power	20 to 60 Vdc	20 to 60 Vdc 20 to 264 Vac	20 to 60 Vdc	85 to 264 Vac
Output	PNP (3-wire)	SPDT relay 5 A @ 250 Vac	PNP (3-wire)	NPN (3-wire)
Load Current	500 mA	—	500 mA	500 mA
Electrical Connection	Cable gland or ½ NPT	Cable gland or ½ NPT	DIN 43650 plug	DIN 43650 plug
Time Delay	1 to 20 sec adjustable	1 to 20 sec adjustable	1 sec	1 sec
Enclosure	Glass filled nylon	Glass filled nylon	316 SS DIN 43650	316 SS DIN 43650
Operating Ambient	-10 to 80°C (14 to 176°F)	-10 to 80°C (14 to 176°F)	-10 to 120°C (14 to 248°F)	-10 to 120°C (14 to 248°F)
Protection	NEMA 4 (IP65)	NEMA 4 (IP65)	NEMA 6 (IP67)	NEMA 6 (IP67)

SPECIFICATIONS

Power Consumption: ±5 mA
Switching Point: 12 mm from tip
Accuracy: ±0.1%
Repeatability: ±0.5 mm
Wetted Parts: 316 SS
Max Pressure: 50 bar (725 psi)

Dimensions:
DIN 43650 Plug (LTUM Models
(1.0625 x 3.125")
Nylon Head: 88 W x 80 mm H
(3.5 x 3.125")**
Aluminum Head: 89 Dia x 126 mm H
(3.5 x 5")**

Insertion Length, "D" Dimension:
80 mm (3.15") standard; measure
from bottom of hex to tip of probe.
** Available on LTUR and LTUP models only.

Standard Configurations

To Order	
Model No.	**Description**
LTUP-2011	Tuning fork level switch, 20 to 60 Vdc power, PNP output, 316 SS, ¾ NPT connection, nylon enclosure, standard 80 mm (3.15") insertion depth
LTUR-2011	Tuning fork level switch, 20 to 264 Vac/20 to 60 Vdc power, 5 A SPDT relay output, 316 SS, ¾ NPT connection, nylon enclosure, standard 80 mm (3.15") insertion depth
LTUR-2041	Tuning fork level switch, 20 to 264 Vac/20 to 60 Vdc power, 5 A SPDT relay output, 316 SS, 1.5" tri-clamp connection, nylon enclosure, standard 80 mm (3.15") insertion depth
LTUR-2012	Tuning fork level switch, 20 to 264 Vac/20 to 60 Vdc power, 5 A SPDT relay output, 316 SS, ¾ NPT connection, aluminum enclosure with ½ NPT conduit, standard 80 mm (3.15") insertion depth
LTUM1-2014	*Replaced by LTUM1-3014. See website for specifications.* https://www.omega.com/en-us/level-measurement/level-switches/ltum1-3014-series/p/LTUM1-3014
LTUM2-2014	Tuning fork level switch, 85 to 264 Vac power, NPN output, 316 SS, ¾ NPT connection, DIN 43650 plug, standard 80 mm (3.15") insertion depth

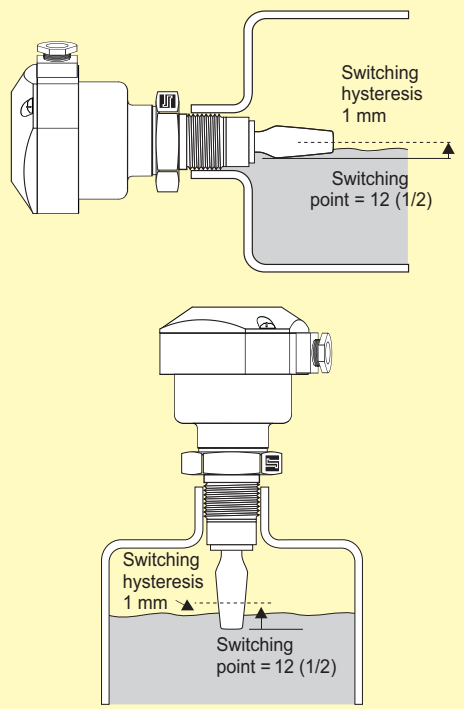
Model No.	Description
LTUP-2(A)(B)(C)-(D)	Custom tuning fork point level switch; PNP output; Select wetted material (A), process connection (B), enclosure (C) and insertion length in inches (D)
LTUR-2(A)(B)(C)-(D)	Custom tuning fork point level switch; relay output; Select wetted material (A), process connection (B), enclosure (C) and insertion length in inches (D). *(Model LTUR-2022 replaced by LTUR-3022.)* https://www.omega.com/en-us/level-measurement/level-switches/ltur-3022-series/p/LTUR-3022
LTUM1-2(A)(B)(4)-(D)	Custom tuning fork point level switch; PNP output, with miniature plug; Select wetted material (A), process connection (B), enclosure (4) and insertion length in inches (D)
LTUM2-2(A)(B)(4)-(D)	Custom tuning fork point level switch; SSR output, with miniature plug; Select wetted material (A), process connection (B), enclosure (4) and insertion length in inches (D)

Options Ordering

Ordering Suffix Description	
A-Wetted Materials	
0	316 SS
1	ECTFE/ETFE coating; flange connections recommended
B-Process Connection	
1	¾ NPT thread
2	1 NPT thread
3	1½ NPT thread
4	1.5" Tri-GripTM, sanitary*
5	2" flange, ANSI, 150# 316 SS
Others	Consult Engineering with details
C-Enclosure	
1	Glass filled nylon with ½ NPT conduit with cable gland**
2	Aluminum die cast with ½ NPT conduit entry**
3	Aluminum die cast with cable gland entry
4	316 SS DIN 43650; for LTUM units only
D-Insertion Length	
D (in)	Rod length (in); 1.5 m (60") maximum

***** Tri-Grip™ (Tri-Clamp® compatible).
Comes complete with operator's manual.
Ordering Examples: LTUP-2011, tuning fork level switch, 20 to 60 Vdc power, PNP output, 316 SS, ¾ NPT connection, nylon enclosure, 80 mm insertion depth.
LTUM2-2014, tuning fork level switch, 85 to 264 Vac power, SSR output, 316 SS, ¾ NPT connection, DIN 43650 plug, 80 mm insertion depth.

Dimensions: mm (inch)



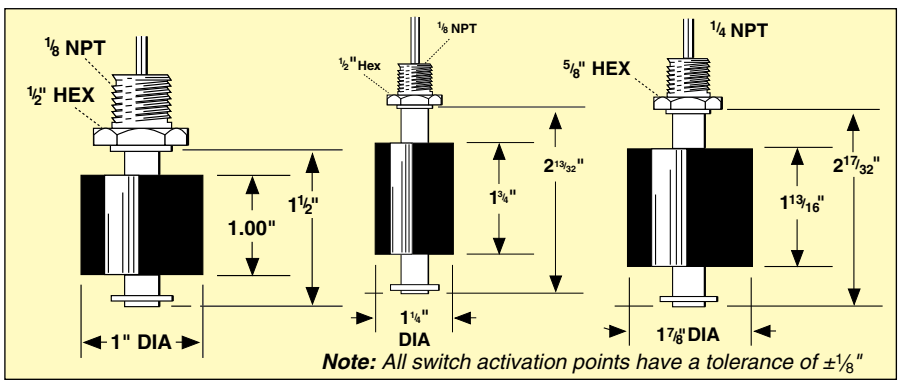
Single Station, Vertical Mounting

LV Series

1 YEAR WARRANTY

- Low Cost and Compact for General Purpose Level Monitoring
- Shock and Vibration Resistant
- Mounts Vertically at Top or Bottom of Tank
- Reed Switch Design for High Repeatability
- User Selectable, Normally Open or Normally Closed SPST Switch

LV-10 shown larger than actual size. LV-20 shown larger than actual size. LV-30 shown larger than actual size.



Note: *All switch activation points have a tolerance of ±⅛"*

Note: *To determine fluid specific gravity, add 0.1 to float specific gravity in clean liquids and 0.3 to float specific gravity in dirty or viscous liquids.*

The LV-10 Series level switches feature a small float displacement, especially suited for narrow or restricted areas. A standard ⅛ MNPT fitting allows for quick installation in either the top or bottom of the tank or vessel. A sealed SPST switch provides consistently high accuracy and repeatability while minimizing the effects of shock, vacuum, or vibration. Extremely versatile, the switch is user selectable as normally open or normally closed by simply removing the retaining clip and inverting the position of the float.

For intermediate float displacement, the LV-20 Series will yield long life and greater stability for a broad range of level monitoring requirements. The LV-30 Series larger float displacement is intended for use with liquids of high viscosity, and is well suited for harsh environments. Both models share the standard features of the LV-10.

Visit us online for maximum voltage/ current ratings.

SPECIFICATIONS

Stem Material: Brass or 316 SS
Float Material: Buna
Other Wetted Materials: 316 SS, Hysol epoxy
Operating Temperature:
Water: -40 to 82°C (-40 to 180°F)
Oil: -40 to 149°C (-40 to 300°F)
Mounting: ⅛ NPT for LV-10 and LV-20, ¼ NPT for LV-30
Switch: SPST
Switch Actuation: Approx. ½ the distance from end of stem to mounting, or at halfway point of float travel
Lead Wires: 22 AWG 24" polymeric for LV-10; 18 AWG 24" polymeric for LV-30 and LV-20
Specific Gravity of Float: LV-10: 0.50; LV-20: 0.58; LV-30: 0.43

To Order

Model No.	Stem Material	Switch Rating	Pressure Rating
LV-10	Brass	20 VA	300
LV-11	316 SS	20 VA	300
LV-20	Brass	20 VA	150
LV-21	Brass	100 VA	150
LV-22	316 SS	20 VA	150
LV-23	316 SS	100 VA	150
LV-30	Brass	20 VA	150
LV-31	Brass	100 VA	150
LV-32	316 SS	20 VA	150
LV-33	316 SS	100 VA	150

Comes complete with operator's manual.

Ordering Examples: LV-20, *vertical-mounted liquid-level switch with a brass stem and switch rated to 20 VA.*

LV-31. *100 VA rated switch with a brass stem.*

K

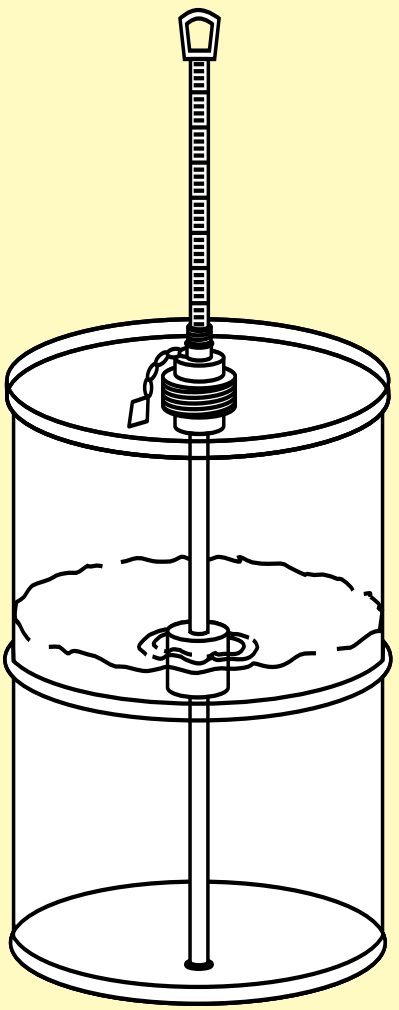
Drum Level Indicators

LV-110 Series

- **Compatible with Most Liquids and Chemicals**
- **Models Rated to Maximum 750 psi**
- **Drum Level Indicators Require No Electricity**

The LV-110 Series drum level indicators are compact, self-contained liquid-level indicators designed for use in 55-gallon drums. A magnet-equipped float senses level, and the user can obtain a readout by removing the protective cap and reading the indicator measuring tape. LV-110 units can be used in either horizontal or vertical drums.

Vertical Mount Typical



LV-113 shown smaller than actual size.

SPECIFICATIONS

Temperature Range:
316 SS: -40 to 149°C (-40 to 300°F)
Brass/Buna: To 82°C (180°F) in water, -40 to 110°C (-40 to 230°F) in oil
Pressure Rating: 750 psi for 316 SS float; 300 psi for Buna floats
Mounting: 2 NPT
Tube/Fitting Size: ½" OD tube
Mounting Attitude: Vertical ±30°

To Order

Model No.	Length (L) Drum Position (inch)	Stem/Float	Float Specific Gravity
LV-110	22 horizontal	Brass/Buna	0.48
LV-111	22 horizontal	316 SS	0.64
LV-112	33 vertical	Brass/Buna	0.48
LV-113	33 vertical	316 SS	0.64
LV-115	33 vertical	PVC	0.8

Ordering Example: LV-113, *316 SS drum level indicator, 33" vertical.*

LEVEL SWITCHES
With 15 A SPDT Switch

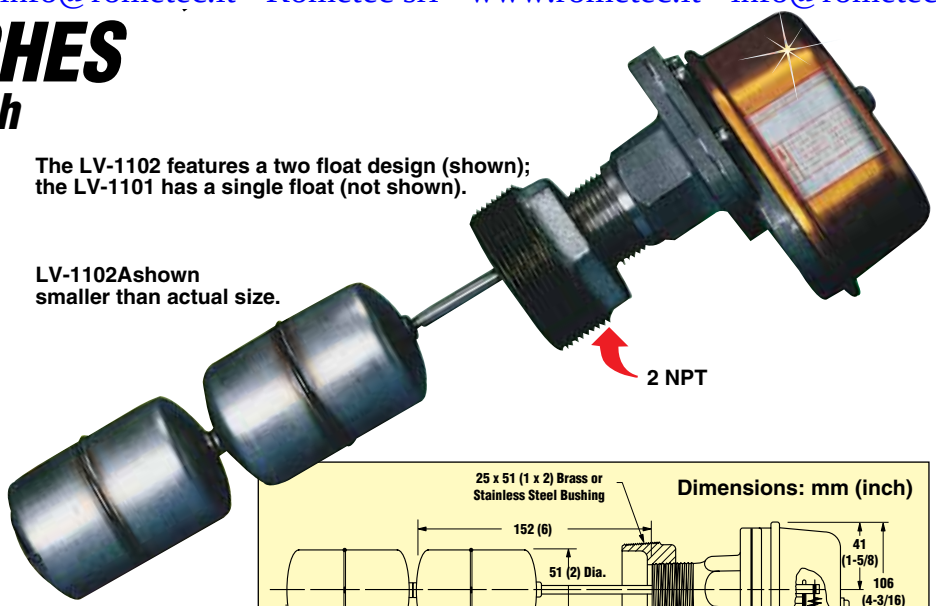
LV-1100/1200 Series

CE RoHS

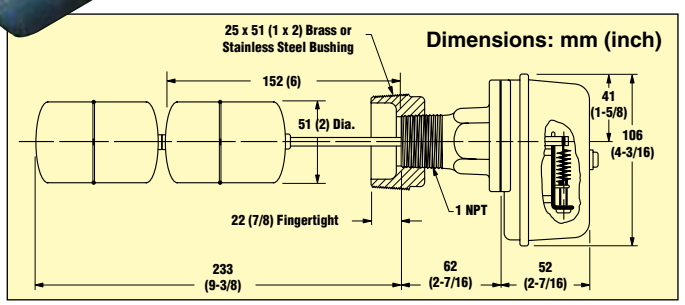
- Rugged Industrial Design
- Non-Magnetic Design—Suitable for Rusty Environments
- 15 A SPDT Switch Directly Controls Pump
- For Side Mounting Only

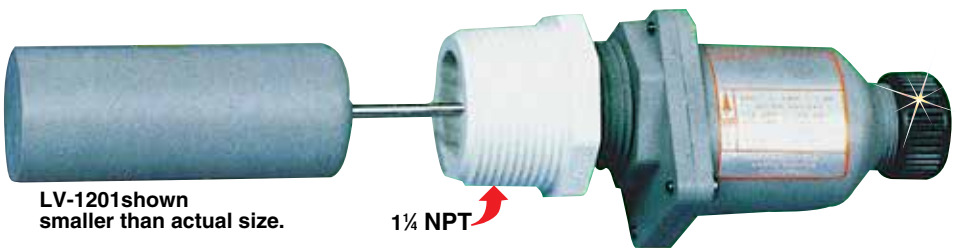
The LV-1100 and 1200 level switches feature a non-magnetic design suitable for applications where magnetic particles (i.e., rust) are present. The LV-1100 series also features rugged metal construction and a buoyancy adjustment to allow the unit to be used with fluids down to SG (specific gravity) = 0.6. The LV-1200 series features plastic and 316 SS or Hastelloy® C construction for more corrosive applications or where the low cost of plastic construction is an advantage.

The LV-1102 features a two float design (shown); the LV-1101 has a single float (not shown).

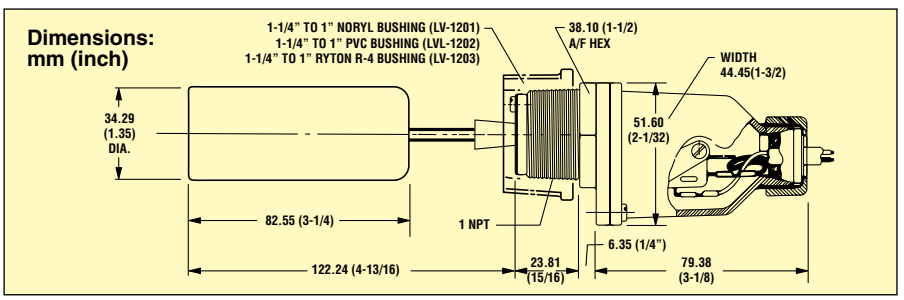


LV-1102Ashown smaller than actual size.





LV-1201shown smaller than actual size.



SPECIFICATIONS

Relay Switch:
SPDT 15 A @ 125 or 250 Vac; 10,000,000 operations median

Max Temperature/Pressure:
LV-1100 Series:
300 psig @ 82°C (180°F)
LV-1202: 75 psig @ 93°C (200°F), 100 psig @ 23°C (75°F)
LV-1201: 75 psig @ 23°C (75°F), 200 psig @ 10°C (50°F)
LV-1203: 75 psig @ 93°C (200°F), 100 psig @ 230°C (75°F)

Liquid Level Change to Actuate Switch: ¼"

Size:
LV-1100: Fits through 2 NPT hole
LV-1200: Fits through 1¼" hole

Water Resistant Strain Relief Fitting (LV-1200): For cable diameters 0.250" ±0.025"

To Order

Model No.	Wetted Parts	Min Specific Gravity	Weight kg (lb)
LV-1101A	Red brass, phosphor bronze 316 SS hardware, 304 SS, EPDM seal, cork-chloroprene gasket, Noryl® cover	0.6	1.36 (3)
LV-1102A	316 SS and 302 SS, FKM, PTFE, Noryl cover	0.6	1.36 (3)
LV-1201	Noryl (a phenylene oxide based resin), 316 SS, EPDM	0.6	0.17 (½)
LV-1202	PPS, 316 SS, FKM, PVC	0.7	0.17 (½)
LV-1203	PPS, Hastelloy C, FKM	0.7	0.17 (½)

Comes complete with operator's manual.
***Ordering Examples: LV-1101A,** brass side mount level switch.*
***LV-1201.** Norvl. 316 SS side mount level switch.*

LEVEL MEASUREMENT PROBES

LV3000/4000 Series

1 YEAR WARRANTY

LV4021-24 shown smaller than actual size.

- Can Operate at High Temperatures and Pressure
- Unaffected by Coating Media
- Accurate and Reliable Measurement
- Easy, Economical Installation
- Rugged Construction
- No Moving Parts
- Compatible with Both Conductive and Non-Conductive Media
- Wide Range of Applications/Industries (e.g., Water, Oils, Corrosives)
- Sanitary Mount Available

iSeries CNi16D33 controller shown smaller than actual size.

The LV3000/LV4000 Series continuous level measurement probes are flexible, cost-effective solutions for applications involving liquids, pastes, and some solids. The built-in (one-piece) electronic module provides a 4 to 20 mA output (2-wire) signal that is proportional to the process level. Zero and span adjustment helps account for various media, tank dimensions, rod lengths, and positions of installation.

OMEGA® offers these probes in several different models. The user must choose the probe that suits his or her application and install it in the proper location. When submerged, the probe must be able to produce enough capacitance variance. The probe's success depends on these important factors:

A) Conductive materials can cause a short circuit between a bare stainless steel probe and the tank wall. For this situation, we recommend using PTFE sleeving on the rod surface.

B) Material buildup affects the accuracy of RF capacitive measurements. Additional adjustment to the probe's sensitivity is therefore recommended.

Housings must be compatible with the requirements for hazardous, washdown, wet, or dusty environments. For explosion-proof environments, the housing may need to be certified. In addition, the active probe might need to be intrinsically safe or have an intrinsic safety barrier.

The electronic circuitry of the probe performs several functions, such as rectifying and filtering the incoming power, generating the radio frequency signal, and measuring the changes in current flow.

SPECIFICATIONS

Accuracy: 0.5%
Repeatability: ±1 mm
Level Indication:
Bar graph, 0 to 1000%
Process Connection:
¾ to 1½ NPT, Tri-Grip™ or flange
Wetted Material: 316 SS or PTFE
Enclosure Material: Aluminum die cast
Maximum Pressure: 290 psi (20 bar)
Operating Temperature: -10 to 120°C (14 to 248°F)
Class Protection:
LV3000: NEMA 4 (IP65)
LVCN410: IP40
Maximum Probe Length: 1.8 m (6')
Dimensions:
Aluminum Die-Cast Head:
89 W x 108 mm H (3.5 x 4¼")
Diameter of Probe: 16 mm (⅝")
Electrical Connection: Cable gland with ½ NPT conduit

Note: *The LV3000 Series probes require a LVCN400 Series controller.*

SPECIFICATIONS (LVCN410 SERIES)

Operating Voltage: 24 Vdc, 110 or 240 Vac (50/60 Hz)
Current Consumption: 4 mA
Adjustment: Zero and span (potentiometer) and 2 switch point (potentiometer)
Range of Sensitivity: 50 to 1000 pF
Output: 4 to 20 mA and 2-relay SPDT
LVCN411/LVCN412:
73 W x 110 H x 110 mm L
(2⅞ x 4⅜ x 4⅜")

SPECIFICATIONS

Accuracy: 0.5%
Repeatability: ±1 mm
Operating Voltage: 12 to 30 Vdc
Adjustment:
Zero and span (potentiometer)
Range of Sensitivity: 100 to 5500 pF
Frequency Oscillation: 400 kHz
Output: 4 to 20 mA (2-wire)
Process Connection:
¾ to 1½ NPT, Tri-Grip or flange
Wetted Material: 316 SS or PTFE
Enclosure Material: Glass-filled nylon or aluminum die cast
Maximum Pressure: 290 psi (20 bar)
Operating Temperature:
-10 to 120°C (14 to 248°F)
Class Protection: NEMA 4 (IP65)
Maximum Probe Length: 1.8 m (6')
Dimensions:
Nylon Head: 89 W x 64 mm H (3.5 x 2.5")
Aluminum Die-Cast Head:
89 W x 108 mm H (3.5 x 4.25")
Diameter of Probe: 16 mm (⅝")
Electrical Connection:
Cable gland with ½ NPT conduit

Note: *The LV4000 Series probes require a galvanic isolator, LI-420*

SPECIFICATIONS

Input Current from the Evaluation Instrument: 4 to 20 mA
Input Voltage: 22 to 24 Vdc
Output Current: 4 to 20 mA
Output Voltage to the Transducer at 20 mA: 12.5 V
Output Voltage to the Transducer at 4 mA: 15.5 V
Resistance per Conductor: 15 Ω
Testing Voltage:
Input/output circuit: 2000 V_{eff}
Domestic Current Demand:
300 ±60 µA
Ambient Temperature:
-20 to 70°C (-4 to 158°F)
Enclosure Dimensions:
44 W x 82 H x 110 mm L
(1¾ x 3¼ x 4⅜")

LI-420 shown actual size.

LV4121-36 shown smaller than actual size.

To Order

Model No.	Description of Capacitance Transmitter with 4 to 20 mA Output and Switch
LV4111-24	60 cm (24") long probe with ¾ NPT connection, with PTFE sleeving and nylon head
LV4121-36	90 cm (36") long probe with 1 NPT connection, with PTFE sleeving and nylon head
LV4121-48	1.2 m (4') long probe with 1 NPT connection, with PTFE sleeving and nylon head
LV4121-60	1.5 m (5') long probe with 1 NPT connection, with PTFE sleeving and nylon head
LV3123-48-HT	1.2 m (4') long probe with 1 NPT connection, with high temperature PTFE sleeving and aluminum die-cast head, 177°C (350°F); Remote electronics required LVCN410 Series
LVCN411	24 Vdc powered controller with relay and 4 to 20 mA output for LV3000 Series only
LVCN412	115 Vac powered controller with relay and 4 to 20 mA output for LV3000 Series only

Accessories

Model No.	Description
CNI16D33	1/16 DIN dual display with two 3 A relays and 24 Vdc excitation
TX4-100	30 m (100') spool of 4-conductor wire
FPW-15	15 Vdc power supply
LI-420	Loop isolator (required for the LV4000 Series)

Custom Models Available

Model No.	Description for Built to Order Unit
LV4XYZ-LENGTH (inches)	Custom capacitance system, specify X, Y, Z from **Options**
LV3XYZ-LENGTH (inches)	Custom remote capacitance system, requires LVCN410 Series remote electronics, specify X, Y, Z from **Options**

*Specify all length in inches. Maximum length is 72" (6') for **LV4000/LV3000.***

Options

Ordering Suffix	Description
X-Insulation Connection	
0	316 SS rod
1	PTFE sleeve*
Y-Process Connection	
1	¾ NPT thread
2	1 NPT thread
3	1.5 NPT thread
4	1.5 Tri-Grip, sanitary
5	Flange 2" ANSI, 15016 316 SS
Others	Please specify
Z-Enclosure	
1	Glass-filled nylon with ½ NPT conduit entry and cable gland
2	LV4000 Aluminum die cast with ½ NPT conduit entry
3	LV4000 Aluminum die cast with cable gland entry
4	LV3000 Aluminum die cast with ½ NPT conduit entry
5	LV3000 Aluminum die cast with cable gland entry
Length of Rod (-LENGTH)	
Specify Inches	Length of rod
High Temp to 350°F (-HT)	
Add "-HT" to Model No.	High temperature to 177°C (350°F)*

Comes with complete operator's manual.

***** *High temperature PTFE sleeving available for temperatures up to 200°C (382°F). For PTFE sleeving add suffix **"HTPTFE"** to model number, for additional cost.*

***Ordering Examples: LV4111-24,** 60 cm (24") level transmitter, **CNi16D33,** process controller, and **TX4-100,** multiconductor wire.*

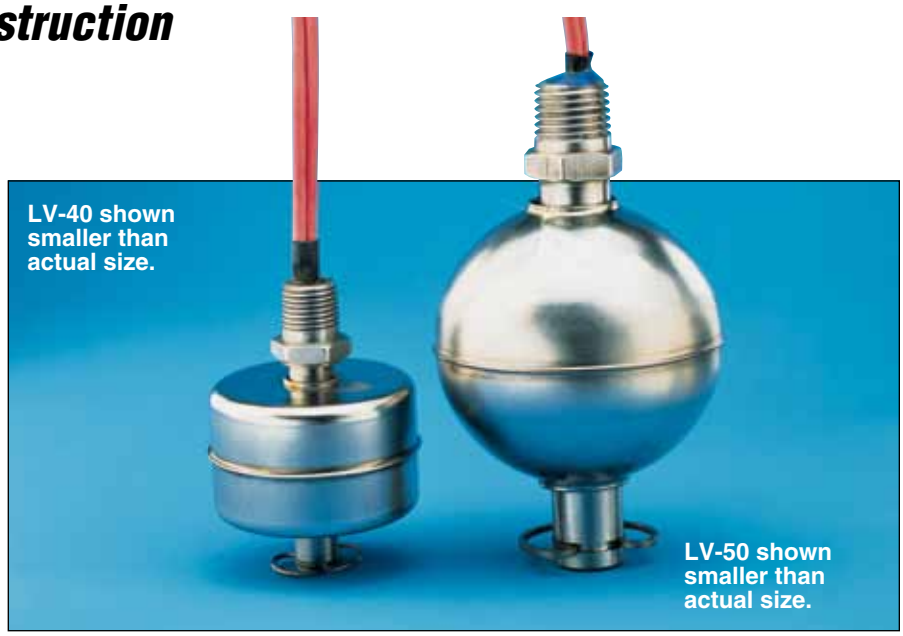
***LV4121-36,** 90 cm (36") level transmitter, **FPW-15**, power supply.*

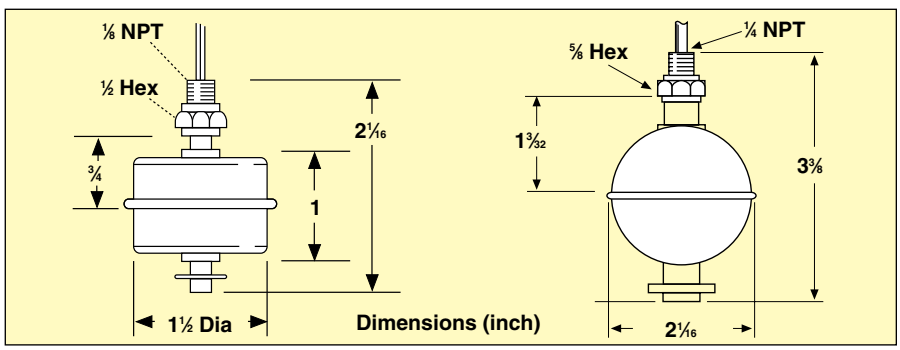
All Stainless Steel Construction

LV-40/50 Series

1 YEAR WARRANTY

- Well Suited for Rough or Corrosive Liquids
- Water-Purifying and Medical Application Models
- High-Pressure Models up to 750 psi
- Normally Open or Normally Closed SPST Switch, User Selectable
- Mounts Vertically at Top or Bottom of Tank





Constructed entirely of 316 SS, the LV-40 single-station level switch is designed to withstand the effects of a wide range of chemicals. With a maximum operating temperature of 149°C (300°F), this switch is ideal for medical and water purification. Its small float displacement allows for high accuracy and reliability in shallow tanks and reservoirs.

The LV-50 Series level switches deliver superlative performance and dependability under the most severe operating conditions. The sensor incorporates a larger float displacement and all stainless steel construction for consistent level monitoring in liquids pressurized up to 750 psi. Ideal for level sensing in chemical plants and systems, models are available for temperatures up to 249°C (480°F).

Mounting: ⅛ NPT for LV-40; ¼ NPT for LV-50 Series
Switch: SPST
Switch Actuation: Approx. ½ the distance from end of stem to mounting, or at halfway point of float travel
Lead Wires: 22 AWG, 24" polymeric; 18 AWG, 24" polymeric for LV-50 Series
Specific Gravity of Float: LV-40: 0.62; LV-50: 0.64

Note: To determine fluid specific gravity, add 0.1 to float specific gravity in clean liquids and 0.3 to float specific gravity in dirty or viscous liquids.

For complete technical and ordering information, please visit us online.

SPECIFICATIONS

Stem Material: 316 SS
Float Material: 316 SS
Operating Temperature: -40 to 149°C (-40 to 300°F); -40 to 249°C (-40 to 480°F) for LV-52
Pressure Rating: 100 psi for LV-40; 750 psi for LV-50 Series

To Order

Model No.	Temperature Rating	Switch Rating
LV-40	-40 to 149°C (-40 to 300°F)	10 VA
LV-50	-40 to 149°C (-40 to 300°F)	20 VA
LV-51	-40 to 149°C (-40 to 300°F)	100 VA
LV-52	-40 to 249°C (-40 to 480°F)	20 VA

Comes complete with operator's manual.

***Ordering Example: LV-51,** all stainless steel high-temperature liquid-level switch with a 100 VA rating.*

***LV-40.** all stainless steel high temperature liquid-level switch with a 10 VA rating.*

SINGLE STATION
VERTICAL SWITCHES

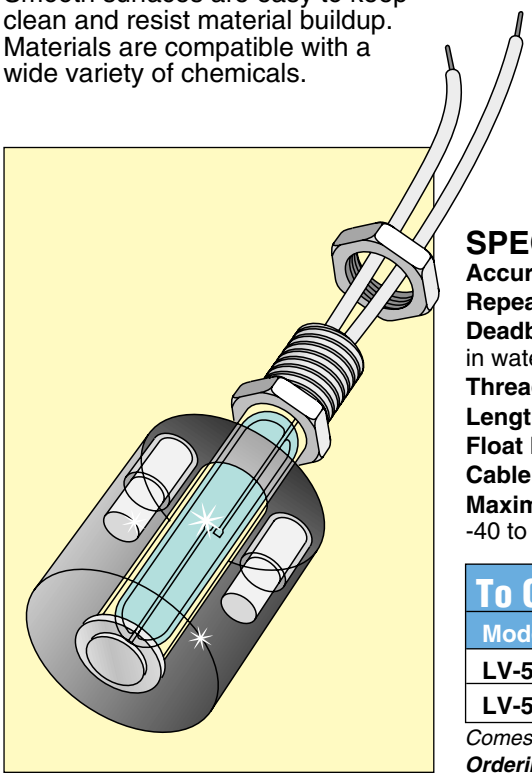
LV-510

1 YEAR WARRANTY

- **Low Cost, Flexible Design**
- **Mounts Vertically at Top or Bottom of Tank**
- **Excellent for Smaller Restricted Areas**
- **Sealed Reed Switch for High Reliability**
- **Rugged, Resists Vibration and Shock**
- **Smooth Surfaces Easy to Keep Clean**
- **Versatile in its Application**

The OMEGA® small displacement single station level switches are well suited for many OEM applications. Very compact, the switches are ideal for restricted or limited space. The reed switch design allows the user to select either normally open or normally closed by simply removing the retaining clip and inverting the position of the float. Smooth surfaces are easy to keep clean and resist material buildup. Materials are compatible with a wide variety of chemicals.

LV-510 shown larger than actual size.



SPECIFICATIONS

Accuracy: ±5 mm in water
Repeatability: ±2 mm in water
Deadband Hysteresis: ±10 mm in water
Thread NPT: ⅛
Length, Overall: 58 mm (2.3")
Float Diameter: 25 mm (1.00")
Cable: 0.6 m (2'), 2 wire, 22 gauge
Maximum Temperature: -40 to 90°C (-40 to 194°F)
Minimum Sp. Gravity Liquid: 0.8
Maximum Switching Current: 50 VA @ 120 Vac
Signal Output: Dry switch closure, selectable, NO or NC states
Maximum Pressure Rating: 25 psi ambient
Wetted Materials: Polypropylene (PP) or PVDF
Dimensions: 53 mm (2.3") L x 0.8" NPT

To Order

Model No.	Description	Material	Size
LV-510	Vertical float	PP	⅛ NPT
LV-511	Vertical float	PVDF	⅛ NPT

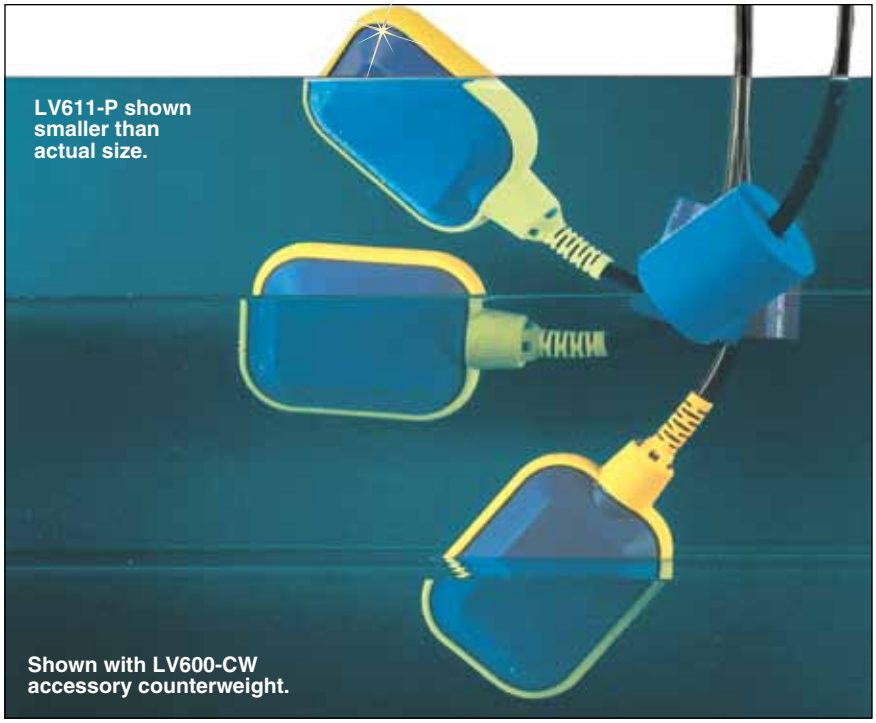
Comes complete with operator's manual.
***Ordering Example: LV-511,** PVDF small vertical switch.*

No Hazardous Mercury Switches Required

LV600 Series

1 YEAR WARRANTY RoHS

- **Use One Switch for Differential or High/Low Control**
- **Adjustable Level Differential from 15.2 cm to Over 30.5 m (6" to Over 100')**
- **Case and Cable Hermetically Sealed by Plastic Injection Molding**
- **Circular and Rectangular Designs**



The LV600 Series unique float level switches provide an economical means of pump-up/pump-down level control with just one level switch. The ON/OFF differential is set by adjusting the length of cable over which the LV600 is allowed to float. Depending on whether the LV600 is floating with the cable UP or DOWN (see drawing), the 15 amp relay is on or off. The relay changes state when the LV600 is above or below the fixed point by 80% of the cable length. For example, if the cable is fixed for 3 m (10') of free cable, the LV600 will trigger at 2.5 m (8') above and below the fixed point.

Thus, turbulence will generally not cause false switching.

The cable can be fixed to a pipe, or the accessory counterweight can be used by slipping it over the cable (see drawing). The mechanical SPDT switch has no potentially dangerous mercury, is rated for 15 A at 250 Vac, and can switch more than 100,000 times. The internal microswitch relay carries UL and CSA approvals.

The case and cable are hermetically sealed by a two-step plastic injection molding process to ensure a leak-tight seal.

SPECIFICATIONS

Minimum Fluid Specific Gravity: 0.62 for LV610; 0.72 for LV620
Minimum/Maximum Level Differential: Approximately 152 mm (6") to 3', depending on cable length
Operating Temperatures: PVC Cable; Switch Rating: SPDT, 15 A @ 250 Vac, -25 to 50°C (-13 to 122°F); Neoprene Cable; -25 to 50°C (-13 to 122°F)
Operating Pressure: 75 psig at 21°C (70°F) Pressure rating decreases with increasing temperature
Wetted Surfaces: Polypropylene body and PVC or Neoprene cable
Counterweight: Polypropylene 50.8 mm diameter x 57.1 mm H (2" diameter x 2.25" H)

To Order

Model No. PVC Cable	Model No. Neoprene® Cable	Weight kg (lb)	Cable Length m (ft)
Rectangular Design			
LV611-P	**LV611-N**	0.23 (0.5)	0.46 (1.5)
LV612-P	**LV612-N**	0.64 (1.4)	4.5 (15)
LV613-P	**LV613-N**	1.55 (3.4)	13.7 (45)
LV614-P	**LV614-N**	2.00 (4.4)	18.3 (60)
Circular Design			
LV621-P	**LV621-N**	0.34 (0.75)	0.46 (1.5)
LV622-P	**LV622-N**	0.75 (1.65)	4.5 (15)
LV623-P	**LV623-N**	1.66 (3.65)	13.7 (45)
LV624-P	**LV624-N**	2.1 (4.65)	18.3 (60)

Accessory

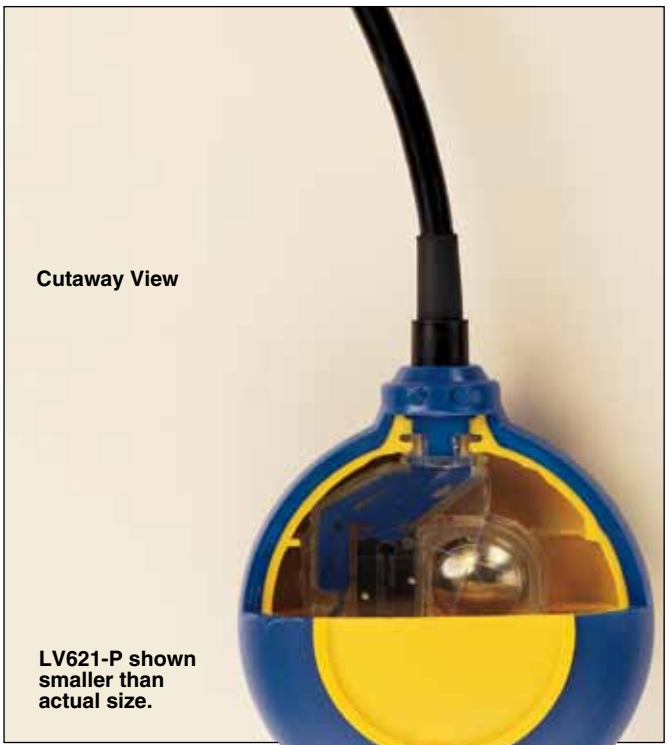
Model No.	Description	Weight kg (lb)
LV600-CW	Counterweight	0.23 (0.5)

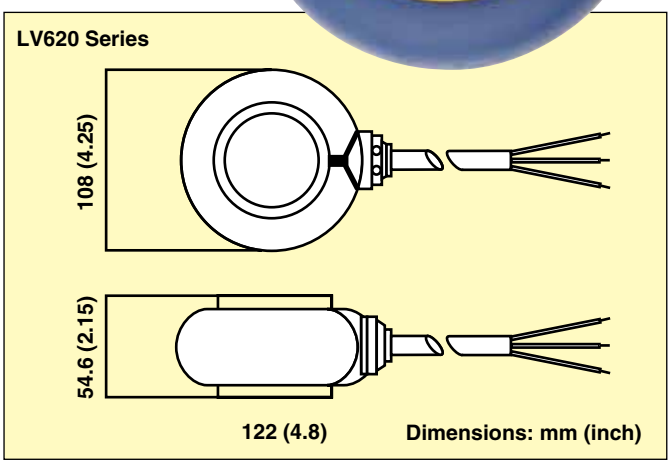
Comes complete with operator's manual.

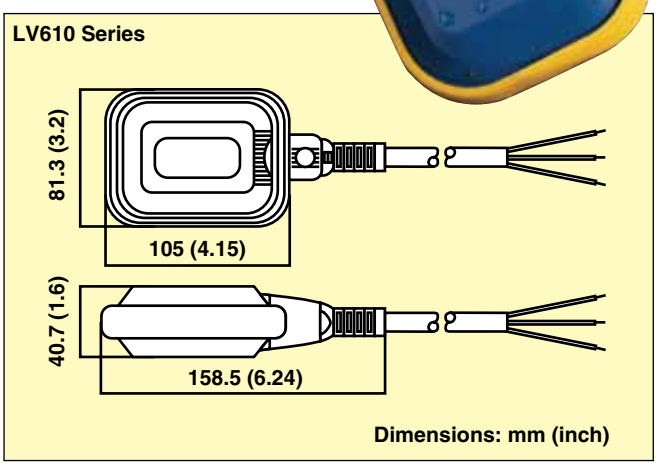
***Ordering Examples: LV621-P**, circular level control, 0.75 lb weight, PVC cable, and **LV600-CW,** counterweight.*

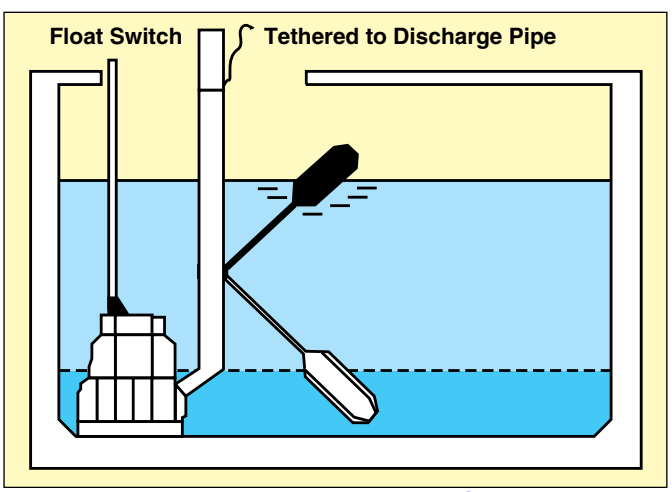
***LV611-N.** rectangular level control. 0.75 lb weight. neoprene cable.*

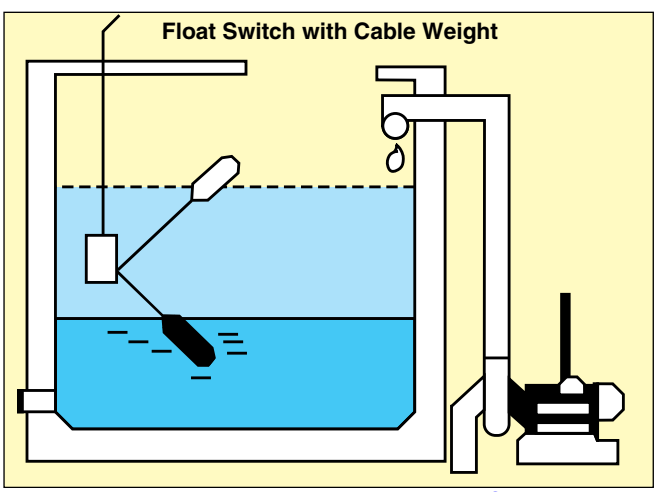
Caution:
Level switches are manufactured to the highest quality specifications. However, due to their economical construction, they should be used only for applications where, in the event of product failure, the risk of damage to equipment or personnel would be minimized. In the case of level switches, one or two back-up switches should also be used to insure that failure of any one switch will be mitigated by the back-up level switches. The user should periodically inspect the product's performance in the actual application. Use of the products beyond the recommended capabilities and lifespan are specifically not recommended.











POINT LEVEL SENSORS

LV800 Series

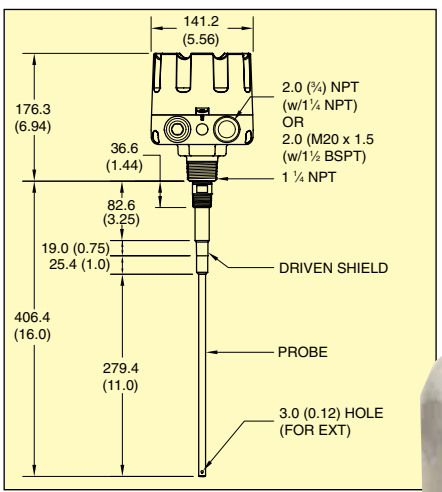
1 YEAR WARRANTY

- **Superior 0.5 pF Sensitivity Ensures Reliability**
- **Build-Up Immunity Helps Eliminate False Signals**
- **High Intensity LED Indicating Light (Ordinary Location Integral Sensors Only)**
- **Simple 2-Step Manual Calibration**

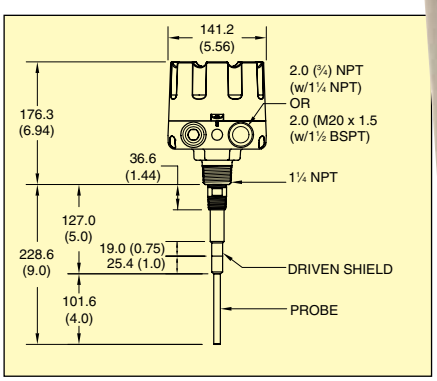
LV800 Series RF capacitance sensors offer cost-effective point level monitoring with reliability you can count on. Omega® provides you with the most affordable solution for your application. Omega's RF capacitance probes are designed to provide a high level of sensitivity, stability and durability for powder and bulk solids applications, as well as liquid and slurry applications.

Principal of Operation

A radio frequency is applied to the probe and is continually analyzed to determine the influence caused by the surrounding environment. As material contacts the probe, the radio frequency shifts indicating an increase in capacitance (C). The active probe of the unit and the vessel's wall make up the 2 plates, (A) of a capacitor which are separated by a fixed distance (D). The probe's insulator and surrounding air provide the dielectric material [with dielectric constant (K)]. As the air (K=1.0) is displaced with any other material (K > 1.0), the capacitance effect (C) is enhanced, thereby changing the application's impedance. This influence is measured within the circuitry and compared to a reference established by the sensitivity setting. The setting determines how much influence must be present before the output changes. The driven shield section of the probe enables the circuitry to ignore product build-up on the probe that would otherwise cause false sensing. The driven shield is activated with the same radio frequency potential as the sensing probe. Since current can not flow between identical potentials, the driven shield blocks current flow from the active probe to the vessel wall through the material build-up, thereby eliminating the sensing of the material build-up.



LV801 Dimensions: mm (inch)



LV802 Dimensions: mm (inch)

LV801, shown smaller than actual size.

SENSITIVITY SETTING OF THE LV800			
SENSITIVITY DESCRIPTION	NO. OF ADJ. TURNS	MATERIAL DIELECTRICS	TYPICAL APPLICATIONS
HIGH	0 to 1	1.5 to 3.0	PLASTICS, SOAP, OILS RUBBER, CEMENT
MED	1 to 3	3.0 to 9.0	GRAINS, FERTILIZERS, FEED, SALT
LOW	> 3.0	> 9.0	WASTEWATER, SLURRIES ANY WATER BASED SOLUTIONS

Applications

are versatile devices providing high and low level readings in bins, silos, tanks, hoppers, and other vessels. LV800 Series superior sensitivity range allows users to properly adjust units to meet the needs of a wide variety of applications. Whether your application is for a powder, liquid, granular solid, or viscous material, the LV800 Series product line offers the right solution.

Typical Applications include, but not limited to		
Feed/Grain	Rubber	Pharmaceuticals
Liquids	Wastewater	Sand
Food Ingredients	Slurries	Cement
Powders	Paint and Coatings	Coal
Granular Solids	Oils	Paper Pulp

Specifications for LV800 Series	
Power	115 Vac (±15%), 2.5 VA, 50/60 Hz, or 230 Vac (±15%), 2.5 VA, 50/60 Hz (depending on model)
Altitude	2000 m (6562') maximum
Installation Category	II
Pollution Degree	4 (reduced to 2 by enclosure) suitable for indoor/outdoor use
Ambient Operating Temperature	-40°C (-40°F) to 65°C (150°F)
Internal Bin Temperature*	To 80°C (176°F) with aluminum mount [<40°C (104°F) ambient]
Output Relay	SPDT, 5A @ 250 Vac, 30 Vdc maximum
External Indicators	Red and green LEDs indicating power and operating mode (ordinary location units only)
Sensitivity	Multi-turn potentiometer adjustment 0.5 pf to 150 pf
Stability	±0.027 pf per °C (±0.015 pf per °F) @ 0.5 pf setting
Time Delay	0.25 to 15 sec delay-to-activate, adjustable 0.25 sec delay-to-deactivate, fixed
Fail-Safe	Switch selectable - HI/LO
Build-Up Immunity	Protected via driven shield to 150 Ω load
Enclosure	Cast aluminum screw-on cover, beige polyester powder coat, NEMA 4 (IP66)
Conduit Connection	Two (2) ¾ NPT connections
Approvals	CSA(US) CSA(C) ordinary locations, CE mark (ordinary location only)

** Influenced by mounting, material thermal conductivity and ambient temperature.*

Probe Specifications

Standard or Food Grade Probe	
Mounting	1¼ NPT aluminum
Probe Material	9.5 mm (⅜") dia. 316 SS probe and guard, PPS and nylon insulators
Probe Length	406 mm (16") from aluminum mounting
Temperature (Probe Only)	PPS: 232°C (450°F) maximum, nylon: 148°C (300°F) maximum
Pressure	3.5 bar (50 psi) maximum (aluminum connection), 10 bar (150 psi) maximum (¾ NPT SS)
Stub Probe (LV802)	
Mounting	1¼ NPT aluminum
Probe Material	9.5 mm (⅜") dia. 316 SS probe and guard, PPS
Probe Length	228.6 mm (9")
Temperature (Probe Only)	PPS 232°C (450°F) maximum
Pressure	3.5 bar (50 psi) maximum (aluminum connection)

To Order

Model No.	Probe Type	Power	Probe Connection
LV801	40 cm (16") PPS	115 Vac	1¼ NPT Al
LV802	23 cm (9") PPS	115 Vac	1¼ NPT Al
LV803	40 cm (16") PPS	230 Vac	1¼ NPT Al
LV804	40 cm (16") food grade nylon	115 Vac	1¼ NPT Al
LV805	40 cm (16") PPS	115 Vac	1¼ and ¾ NPT stainless steel

Comes complete with operator's manual.
***Ordering Examples: LV801,** 40 cm (16") PPS probe, 115 Vac, 1¼ NPT Al connection.*
***LV804,** 40 cm (16") food grade nylon probe, 115 Vac, 1¼ NPT Al connection.*

LEVEL SWITCH

LVC-152-R

1 YEAR WARRANTY · CE · RoHS

Single Switch Mounting Assemblies Available

LVC-152-R shown actual size.

- Reliable Detection of Conductive, Light to Medium Coating Liquids
- Unique Coating Circuit Rejects the Negative Effects of Coating or Scaling Build-up
- All Plastic Construction with PP Materials for Corrosive Environments
- Probe and Cable Rated NEMA 6X (IP68) for Submersible Operation in Tanks or Sumps
- SPST Relay Standard
- Selectable Normally Open or Normally Closed Output States

Warning: Do not install sensor within 15.24 cm (6") of any metal object

APPLICATION MATRIX

	Variable	Yes	No
Liquid	Foam	✓	
	Bubbles	✓	
	Conductive	✓	
	Non-conductive		✓
	Translucent	✓	
	Opaque	✓	
	Clean	✓	
	Dirty		✓
	Turbulent	✓	
	Non-coating	✓	
Tank	Light coating		✓
	Medium coating		✓
	Heavy coating		✓
	Metallic Tank	✓	
	Non-metallic Tank	✓	
	Hazardous		✓

APPLICATION

The LVC-152-R capacitance level switch is the perfect switch solution for conductive coating or scaling type liquids. The LVC-152-R is best applied in grounded vessels which contain water based, light to medium coating or scaling type liquids including soap, wastewater and brine solutions.

The LVC-152-R capacitance switch detects the presence of liquid or air by measuring the conductive or dielectric values which are present in all materials. The guard circuit rejects the negative effects of coating build-up on the probe by eliminating the coating signal path between the active and reference electrodes. As the probe tip becomes immersed in liquid, the capacitance effect is greatly increased and the switch changes state.

SPECIFICATIONS

Accuracy: ±1 mm (0.04") in water
Repeatability: ±0.5 mm (0.02") in water
Dielectric Range: >20 constants
Conductive Range: >100 micromhos
Supply Voltage: 12 to 36 Vdc
Consumption: 25 mA maximum
Relay:
GP: 120 Vac/Vdc @ 1 A
CE: 60 Vac/Vdc @ 1 A
Switch Output: Selectable NO or NC
Temperature Rating:
-40 to 90°C (-40 to 194°F)

Pressure Rating: 150 psi @ 25°C (76°F), derated @ 1.667 psi per °C above 25°C (76°F)
Probe Material: Polypropylene
Probe Rating: NEMA 6X (IP68)
Mounting Threads: ¾ NPT
Cable Type: 3 m (10'), 4-wire, 22 gage with ground, shield & PP jacket
Dimension: 12.7 cm L (5.0") x ¾ NPT
Immersion Length: 7 cm (2.6") from bottom of threads to tip of probe

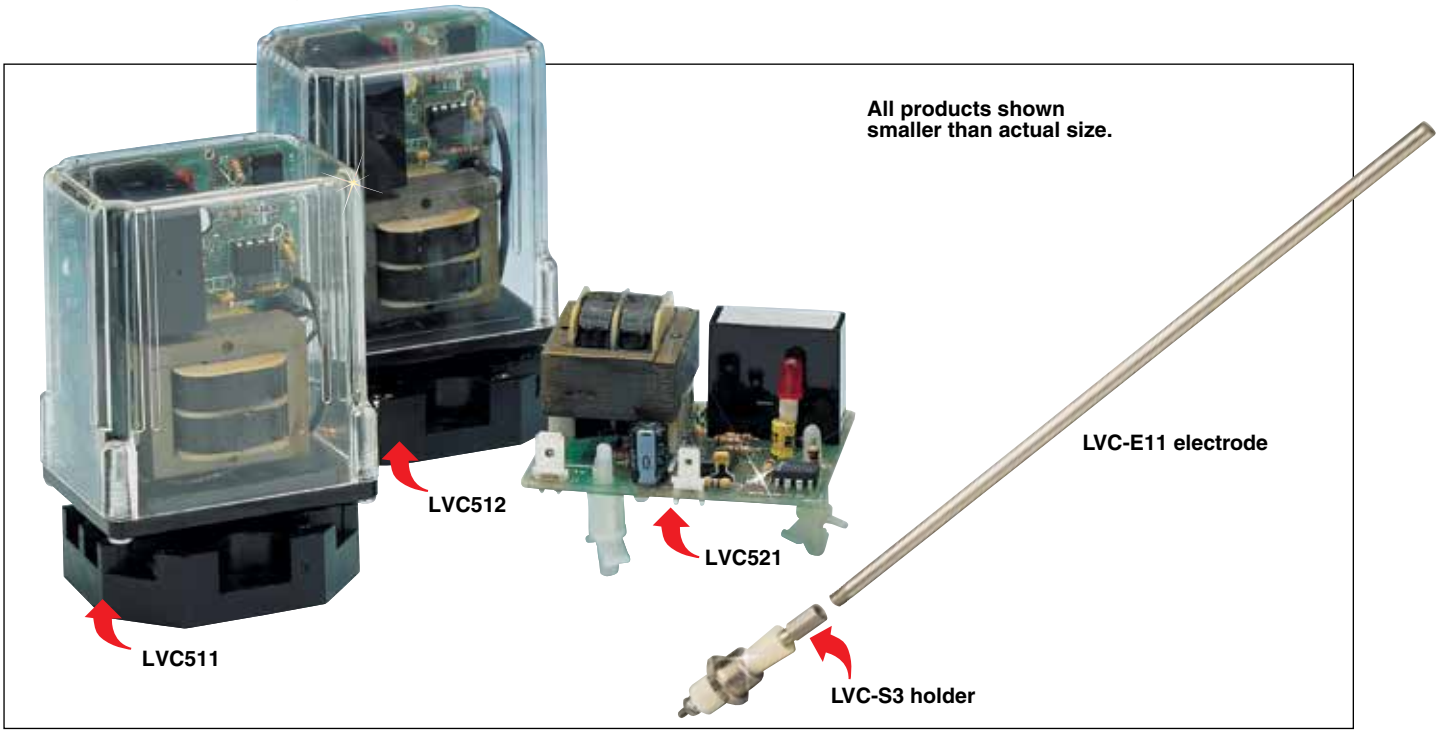
To Order

Model No.	Description
LVC-152-R	Capacitance switch, 12.7 cm (5") long

Comes complete with operator's manual and 3 m (10') cable.
*Two extended cable lengths available. For 7.62 m (25') add suffix "**-25**" to model number, for additional cost. For 15.24 m (50') add suffix "**-50**" to model number, for additional cost.*
***Ordering Example: LVC-152-R** level switch.*

LEVEL SWITCH SYSTEMS

For Liquids Only



LVC Series

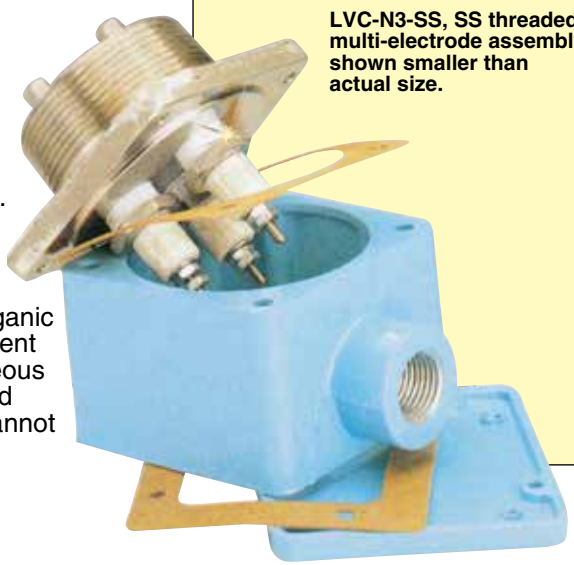
1 YEAR WARRANTY

- **No Moving Parts for Long Life**
- **Wide Chemical Compatibility**
- **Works for Conductive Liquids**

The LVC500 Series electronic level controls should be used whenever a liquid level needs to be maintained, such as pumping down an industrial sump, or indicated, such as a holding tank high-level alarm. A system consists of 3 components: (1) cut-to-length threaded electrode rods; (2) single or multi-electrode holder; (3) remote electronic module(s).

The LVC500 Series operates on a simple conductance principle whereby a small electrical current is passed through the conductive liquid between 2 electrodes or an electrode and a metallic tank wall. For applications that require a separate start and stop point, a single control module, plus 2 electrodes and a tank reference, is required. When several applications or levels are necessary within a single tank, an electrode is needed for each level (plus tank reference), plus a multi-electrode holder and a control module for each differential or single-level application.

Typically, potable water, condensate, acids, and water-based chemicals (inorganic chemicals) have sufficient conductivity. Non-aqueous liquids, such as oils and other hydrocarbons, cannot be measured.

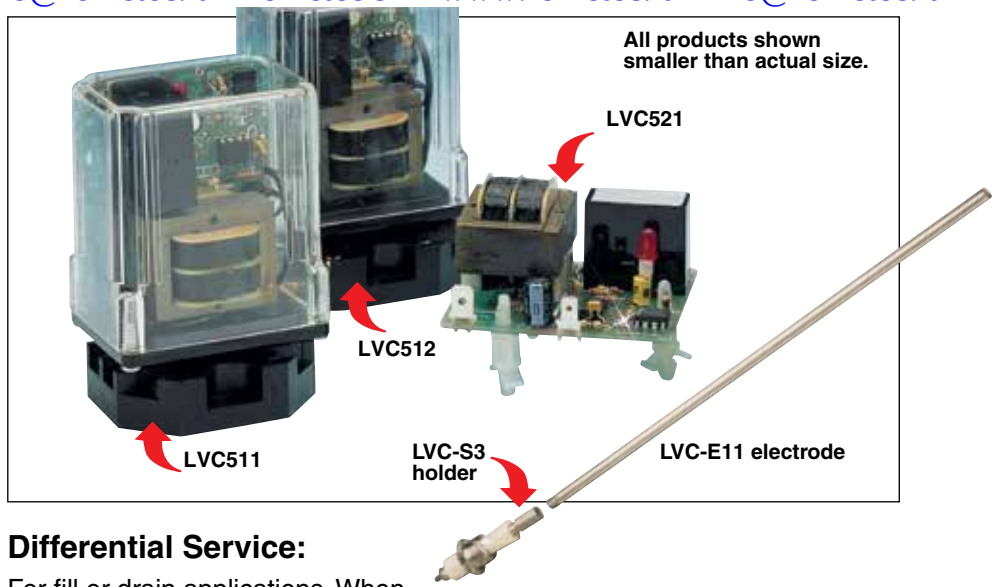


LVC-N3-SS, SS threaded multi-electrode assembly shown smaller than actual size.

Note:
Always treat hazardous areas with respect! If the electrodes or float switch is located in a hazardous area, an intrinsically safe control module must be used. Intrinsically safe controls must be installed by experienced personnel familiar with intrinsic safety wiring, and installation must be in accordance with the National Electrical Code (NEC). The control must be mounted in a non-hazardous location with the wiring to the level probes or float switch going into the hazardous atmosphere. Intrinsically safe wiring must be separated from non-intrinsically safe wiring, and the length of your 14 or 16 gage copper wire must not exceed the specifications listed in the current installation manual. Consult your local electrical code inspector for further details.

Mounting Assemblies

- **SPDT Relay Output**
- **Fully Field Selectable**
- **Transparent Case for Viewing Relay Status**



- Low-voltage probe circuit
- SPDT relay output
- Interface to pumps, valves, or alarm systems
- Field-selectable latching/ non-latching operation
- Field-selectable high/low alarm, pump-up/pump-down

LVC510 Series:

- See-through Lexan® case for viewing relay status LED
- Plug-in module, socket included
- Screw terminal connections for easy wiring

LVC512 Model:

- Field-settable sensitivity to match a variety of liquids
- Required for distilled water (1 MΩ max)

LVC521 Model:

- Open circuit board construction
- Low cost, OEM style
- Spade terminal connections
- Designed to mount on 1/16" backplate with supplied plastic standoffs
- Relay status LED

LVC550 Series:

- Intrinsically safe
- Approved for Class I and II, Division 1, Groups A through G
- 8 A relay output
- LVC551: FM approved LVC552: UL approved
- Can be used with any non-powered switch closure

Electronics Operation Direct Mode Single-Level Service:

Single-Level Service:

For high or low alarms or cutoffs. When the liquid rises to the electrode on terminal H, the control energizes, changing the state of the load contacts. The control remains energized until the liquid level recedes below electrode on terminal H. The control then de-energizes, returning load contacts to original state.

Differential Service:

For fill or drain applications. When the liquid rises to the electrode on terminal H, the control energizes, changing the state of the load contacts. The control remains energized until the liquid level recedes below electrode on terminal L. The control then de-energizes, returning load contacts to original state.

Inverse Mode:

Control energizes with power, changing the state of the load contacts. All other responses are the opposite of the response given by direct-mode operation. Inverse mode is normally used for pump-up or high-level alarm applications.

SPECIFICATIONS

Supply Voltage: 102 to 132 Vac (110 to 132 Vac for LVC552), 50/60 Hz standard; 240 and 24 Vac optional)
Ambient Temperature:
-40 to 65°C (-40 to 150°F)
Switch-Point Hysteresis:
1.6 mm (±1/16")
Relay Time Delay: ½ second delay on rising level
See chart below for additional information.

MOUNTING ASSEMBLIES

Single Electrode:
The LVC-S Series comprises single electrode holders with exposed connection. UL-approved rubber boots are available for connection protection.
Shipping Weight:
LVC-S unit, 170 g (6 oz)
Overall Length: 82.6 mm (3.25")
Multiple Electrodes:
The LVC-N and LVC-F mounting assemblies feature a gasketed, epoxy-coated, die-cast aluminum junction box, and include the proper number of electrode holders.
See chart below for additional information.

Electrodes

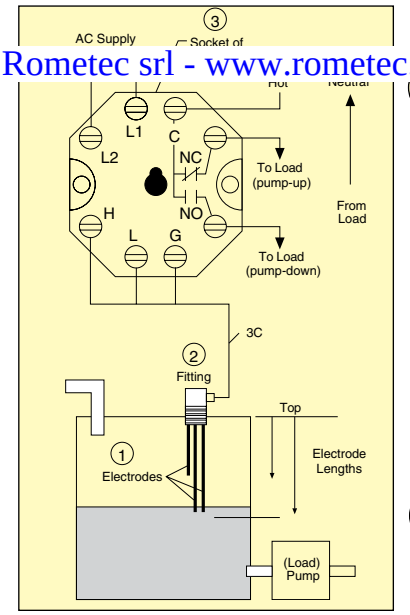
The LVC-E electrodes come standard in 316 SS, but are available in a wide range of materials. Electrodes thread into couplings on LVC-S, LVC-N, and LVC-F mounting assemblies.
Electrode Diameter: 6.35 mm (¼"); ¼" thread length
Electrode Weight:
0.25 g/mm (0.167 lb/ft)

Electronic Modules

LVC Model	Power Consumption	Dimensions: mm (inch)			Shipping Weight g (oz)
		H	W	L	
511	4.5 W	88.9 (3.5)	50.8 (2)	58.7 (2.31)	487 (20)
512	4.5 W	88.9 (3.5)	63.5 (2.5)	66.7 (2.62)	487 (20)
521	4.5 W	34.9 (1.37)	63.5 (2.5)	55.6 (2.19)	487 (20)
551	4.0 W	54 (2.12)	85.7 (3.37)	111.2 (4.18)	765 (27)
552	1.7 W	54 (2.12)	85.7 (3.37)	111.2 (4.18)	765 (27)

Multiple Electrode Assemblies

LVC Model	No. of Electrodes	Housing Dimensions: mm (inch)			Housing Conduit Size
		H	W	L	
NX-BR/FX-BR	1	57.2 (2.25)	57.2 (2.25)	57.2 (2.25)	½ NPT
NX-BR/FX-BR	2 to 4	82.6 (3.25)	82.6 (3.25)	60.4 (2.37)	½ NPT
NX-BR/FX-BR	5 to 7	101.6 (4.0)	101.6 (4.0)	63.5 (2.5)	¾ NPT



1 **Select electrode length as measured from the top of the tank to the required activation point. Determine the number of electrodes necessary for your application.**

2 **Select mounting style to match tank. Select fitting that matches the number of electrodes selected. Select material to match liquid.**

3 **Select the proper electronic module.**

LVR rubber boot for electrode.

Ordering Example

It is desired to have a pump up control system in a plastic tank holding ordinary water. The components ordered are:

1) 1 **LVC-E11** electrode
2) 2 **LVC-E12** electrodes
3) 1 **LVC511** electronics module
4) 1 **LVC-N3-BR** 2 MNPT brass, 3-electrode mounting assembly
5) One 100' roll of **TX4-100** 4-conductor shielded copper cable

The LVC-E electrodes are all threaded into the LVC-N3-BR. Low level is at 24" below the top (between the 2 LVC-E12 electrodes); high level is at 12" below the top (between the LVC-E12 and LVC-E11 electrodes). The LVC511A can be wired for pump-up control, as well as for pump-down, high-level, or low-level alarm. Three of the 4 conductors of the TX4-100 cable are connected to the 3 probe terminals inside the LVC-N3-BR mounting assembly.

Electrodes

1 **To Order**

Model No.	Material	Model No.	Material	Length mm (inch)
LVC-E11	303 SS	**LVC-E51**	316 SS	305 (12)
LVC-E12	303 SS	**LVC-E52**	316 SS	610 (24)
LVC-E13	303 SS	**LVC-E53**	316 SS	915 (36)
LVC-E14	303 SS	**LVC-E54**	316 SS	1220 (48)
LVC-E15	303 SS	**LVC-E55**	316 SS	1525 (60)
LVC-E16	303 SS	**LVC-E56**	316 SS	1830 (72)*

** Beyond 1.8 m (72"), probes require PTFE sleeving at the tip to prevent swaying probes from coming into contact with each other. For very long probes or in highly agitated tanks, spacers may also be required. Consult OMEGA® Flow Department for further details.*

Threaded Single Electrode Holders

2

Model No.	Description	Wetted Materials	Maximum Pressure at Maximum Temperature
LVC-S3	⅜ MNPT for 1 LVC-E electrode open terminal	316 SS/ PTFE	400 psig at 231°C (448°F)

Threaded Multi-Electrode Assemblies (Includes Junction Box)

2

Stainless Steel	Brass	Cast Iron	Wt. kg (lb)	Description
LVC-N1-SS	**LVC-N1-BR**	**LVC-N1-C**	1.8 (3.9)	1 MNPT, for 1 LVC-E electrode
LVC-N2-SS	**LVC-N2-BR**	**LVC-N2-C**	2.6 (5.7)	2 MNPT, for 2 LVC-E electrodes
LVC-N3-SS	**LVC-N3-BR**	**LVC-N3-C**	3.25 (7.2)	2 MNPT, for 3 LVC-E electrodes
LVC-N4-SS	**LVC-N4-BR**	**LVC-N4-C**	3.8 (8.4)	2½ MNPT, for 4 LVC-E electrodes
LVC-N5-SS	**LVC-N5-BR**	**LVC-N5-C**	5.2 (11.4)	3 MNPT, for 5 LVC-E electrodes
LVC-N6-SS	**LVC-N6-BR**	**LVC-N6-C**	5.2 (11.4)	3 MNPT, for 6 LVC-E electrodes
LVC-N7-SS	**LVC-N7-BR**	**LVC-N7-C**	5.25 (11.6)	3 MNPT, for 7 LVC-E electrodes

All threaded assemblies rated for 250 psig, 208°C (406°F).

Flanged Multi-Electrode Assemblies (Includes Junction Box)

2

Stainless Steel	Cast Iron	Nominal Pipe, Flange Size and Description	Flange Diagram mm (inch)	Weight kg (lb)
LVC-F1-SS	**LVC-F1-CI**	1", for 1 LVC-E electrode	108 (4.25)	1.25 (2.75)
LVC-F2-SS	**LVC-F2-CI**	2", for 2 LVC-E electrodes	152 (6)	2.9 (6.5)
LVC-F3-SS	**LVC-F3-CI**	2", for 3 LVC-E electrodes	152 (6)	3.0 (6.7)
LVC-F4-SS	**LVC-F4-CI**	2½", for 4 LVC-E electrodes	178 (7)	3.6 (7.9)
LVC-F5-SS	**LVC-F5-CI**	3", for 5 LVC-E electrodes	190 (7.5)	5 (11)
LVC-F6-SS	**LVC-F6-CI**	3", for 6 LVC-E electrodes	190 (7.5)	4.9 (10.9)
LVC-F7-SS	**LVC-F7-CI**	3", for 7 LVC-E electrodes	190 (7.5)	4.9 (10.9)

Standard flange is 125# cast iron rated for 125 psig, 178°C (353°F); 150# 316 SS flange rated for 225 psig.

Standard Relay Electronics

3

Model Number	Description	Maximum Media Resistance
LVC511	10 A resistive at up to 120 Vac, 8-pin socket	50,000
LVC512	10 A resistive at up to 120 Vac, 11-pin socket	(Field adjustable from 4700 to 1 million Ω)
LVC521	10 A resistive at up to 120 Vac, open circuit board	50,000
Intrinsically Safe Relay Electronics		
LVC552	8 A resistive at up to 120 Vac, UL listed	100,000

Comes complete with operator's manual.
Inverse normally used for pump-up or low-level applications.
*For 240 Vac operation, add suffix **"-240VAC"** to model number, for additional cost.*

LEVEL ALERT SINGLE SENSOR CONTROLLER (AC)

LVCN-100

1 YEAR WARRANTY RoHS

- **Calls Immediate Attention to Alarm Conditions**
- **High Intensity Strobe Light Reduces Operator Error**
- **Mounts Directly on Sensor or OMEGA® Track System**
- **Convenient Reminder to Refill Tank**
- **Adjustable Time Delay Relay**
- **Controls Pumps, Valves and Alarms**
- **LED Displays Switch, Sensor and Relay Status**

LVCN-100 shown larger than actual size.

OMEGA's level alert calls attention to alarm conditions. For operator alert to low inventory levels or high alarm conditions, the level alert offers an excellent solution to these problems. An amber lens distributes the high intensity strobe light in a pattern which calls immediate attention to alarm conditions. The visual alert combined with a controller makes it both cost effective and easy to install.

SPECIFICATIONS

Voltage Input: 120 or 240 Vac, 50 to 60 Hz
Maximum Consumption: 5 watts
Lighting Element: High intensity lamp
Brightness: Greater than 50,000 CP
Relay Output: Isolated and sealed single pole double throw (SPDT) relay, Form C
Switching Mode: Selectable, NO or NC states
Maximum Relay Switching Voltage: 120 Vdc or 240 Vac
Maximum Switched Current: 10 amps
Time Delay: Adjustable from 0.15 to 60 seconds
Maximum Temperature Rating: 70°C (158°F)
Sensor Voltage Supply: Nominal 13.5 Vdc, 1 watt maximum
Mounting Connection: ¾ NPT
Conduit Connection: ½ NPT
Enclosure Rating: NEMA 4X (IP65)
Enclosure Material: Polypropylene (PP), flame retardant
Dimensions: 7.1 Dia. x 11.94 cm H (2.8 x 4.7") x ¾ NPT

Level track mounting systems may be used with the following sensors; LVU-150, LVC-100 and LVV-110. Sold separately and available online.

To Order

Model No.	Description	Mat'l	Size
LVCN-100	Level alert single sensor controller 120 Vac	PP	2.8 x 4.7" x ¾ NPT
LVCN-100-220VAC	Level alert single sensor controller 220 Vac	PP	2.8 x 4.7" x ¾ NPT

Comes complete with operator's manual.
***Ordering Example: LVCN-100**, level alert single sensor controller.*

CONTROLLERS (AC)

LVCN-110/LVCN-20

1 YEAR WARRANTY

Shown smaller than actual size.

- **Mounts Directly on Sensor or OMEGA® Track System**
- **Rugged NEMA 4X (IP65) Enclosure**
- **Adjustable Time Delay**
- **Excellent for High or Low Level Alarm**
- **Controls Pumps, Valves and Alarms**
- **LED Displays Switch, Sensor and Relay Status**

OMEGA's ac single sensor model LVCN-110 controller offers features normally found in much larger controllers. The adjustable time delay relay, invert switch, and LED status enunciators all maximize the flexibility of this powerful controller. High or low level alarm systems can easily be configured with this 120 to 240 Vac controller. The controller can be mounted on a sensor or Omega track system, and is made of reinforced polypropylene. The controller swivels on its base for easy conduit alignment.

The LVCN-20 dual sensor controller is ideal for automatic filling or emptying operations. The controller conveniently mounts to a single sensor or to the sensor track system. This single channel controller offers a latching, automatic fill or empty operation between two sensor inputs. An adjustable time delay feature from 0 to 60 secs. before the relay responds assists in pump and valve protection. The invert and latch switch also expand the flexibility of the controller.

SPECIFICATIONS

Voltage Input: Selectable, 120 or 240 Vac, 50 to 60 Hz.
Maximum Consumption: 5 watts
Relay Output: Isolated and sealed single pole double throw (SPDT) relay, Form C
Switching Mode: Selectable, NO or NC states
Maximum Relay Switching Voltage: 120 Vdc or 240 Vac
Maximum Switched Current: 10 amps
Time Delay: Adjustable from 0.15 to 60 seconds
Maximum Temperature Rating: 70°C (158°F)

Sensor Voltage Supply: Nominal 13.5 Vdc, 27 mA maximum
Mounting Connection: ¾ NPT
Conduit Connection: ½ NPT
Enclosure Material: (PP), flame retardant
Enclosure Rating: NEMA 4X (IP65)
Dimensions: 7.1 dia. x 11.9 cm H (2.8 x 4.7") x ¾ NPT

Level track mounting systems may be used with the following sensors: LVU-150, LVC-100 and LVV-110. Sold separately and available online.

To Order

Model No.	Description	Mat'l	Size
LVCN-110	Single sensor controller	PP	2.8 x 4.7 x ¾ NPT
LVCN-20	Dual sensor controller	PP	2.8 x 4.7 x ¾ NPT

Comes complete with operator's manual.
****** For CE approved, add suffix **"-CE"** to the model number, for additional cost.*
***Ordering Example: LVCN-110**, single sensor controller.*

LVCN-120

1 YEAR WARRANTY RoHS

LVCN-120 shown smaller than actual size.

- **Automatic Fill or Empty**
- **Additional High or Low Alarm**
- **Selectable Normally Open or Normally Closed Relay States**
- **LED Lights Provide User with Sensor, Power and Relay Output Status**
- **10 Amp SPDT Relay Outputs**
- **Installs on EN 50 022 Standard DIN Rail**
- **Time Delay Dampens Relay Chatter**
- **Selectable Latch On or Latch Off Relay Configuration**
- **Controls Pumps, Valves and Alarms**

The LVCN-120 three sensor controller provides an automatic fill or empty capability with an additional high or low alarm. This controller has two 10 A SPDT relays along with selectable normally open or normally closed states. LED enunciator lights provide the user with sensor, power and relay output status. Relay chatter can also be eliminated with a 0 to 60 second time delay adjustment. The LVCN-120 has a selectable latch on or latch off relay configuration. The controller is conveniently installed on an EN 50 022 standard DIN rail or panel mount.

SPECIFICATIONS

Voltage Input: Selectable, 120 or 240 Vac, 50 to 60 Hz
Maximum Consumption: 5 Watts
Relay Output: Isolated single pole double throw (SPDT) relay, Form C
Switching Mode: Selectable, NO or NC states
Maximum Switched: 250 Vac, 10 A, ½ HP
Time Delay: Adjustable from 0.15 to 60 sec.
Maximum Temperature Rating: 70°C (158°F)

Sensor Voltage Supply: Nominal 13.5 Vdc, 27 mA maximum
Sensor Trigger Point: Dry <12 mA, wet >12 mA
Enclosure Mounting: EN 50 022 standard 35 mm DIN rail or panel mount
Enclosure Material: PP, flame retardant
Dimensions: 6.9 H x 9.9 W x 9.1 cm D (2.7 x 3.9 x 3.6")

Level track mounting systems may be used with the following sensors; LVU-150, LVC-100 and LVV-110. Sold separately and available online.

To Order

Model No.	Description	Material	Size
LVCN-120	Three sensor controller	PP	2.7 x 3.9 x 3.6"

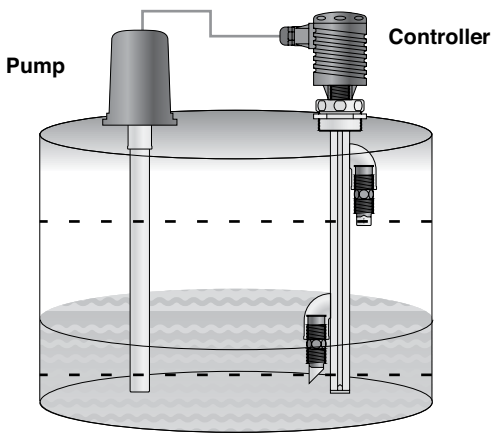
Comes complete with operator's manual.
*For CE approved, add suffix **"-CE"** to the model number, for additional cost.*
***Ordering Example: LVCN-120** three sensor controller.*

LVCN-130

1 YEAR WARRANTY

LVCN-130 shown larger than actual size.

- **Latched 10 Amp SPDT Relay**
- **Controls Pumps, Valves, and Actuators**
- **Selectable Latch On or Off Relay**
- **Designed for Panel Installation on EN 50 022 Standard 35 mm DIN Rail**
- **Automatic Tank Fill or Empty Operation**
- **Selectable Normally Open or Normally Closed Relay States**
- **0 to 60 Second Time Delay Dampens Relay Chatter**



SPECIFICATIONS

Voltage Input: Selectable, 120 or 240 Vac, 50 to 60 Hz
Maximum Consumption: 5 watts
Relay Output: Isolated single pole double throw (SPDT) relay, Form C
Switching Mode: Selectable, NO or NC states
Maximum Relay Switching Voltage: 250 Vac, 10 A, ½ HP
Time Delay: Adjustable from 0.15 to 60 sec.
Maximum Temperature Rating: 70°C (158°F)
Sensor Voltage Supply: Nominal 13.5 Vdc, 27 mA maximum
Sensor Trigger Point: Dry <12 mA, wet >12 mA
Enclosure Mounting: EN 50 022 standard 35 mm DIN rail or panel mount
Enclosure Material: PP, flame retardant
Dimensions: 6.9 H x 9.9 W x 9.1 cm D (2.7 x 3.9 x 3.6")

The LVCN-130 dual sensor controller accepts two sensor inputs for automatic filling and emptying operations. The latched 10 amp relay provides the control interface with pumps and valves. The controller has a time delay feature dampening out relay chatter. Other features include selectable normally open or normally closed relay states and latch on or off relay conditions. The controller is designed for installation on EN 50 022 standard 35 mm DIN Rail or it can be panel mounted.

To Order

Model No.	Description	Mat'l	Size
LVCN-130	Dual sensor controller	PP	2.7 x 3.9 x 3.6"

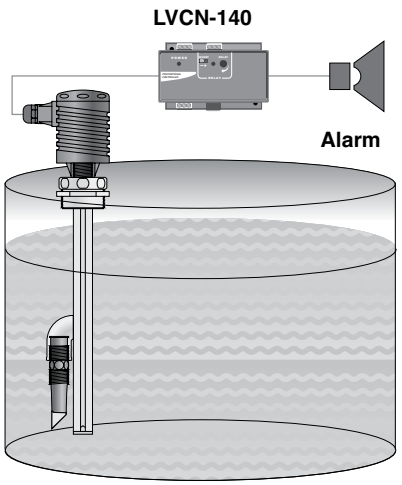
Comes with complete operator's manual.
***Ordering Example: LVCN-130** dual sensor controller.*
*For CE approved controller add suffix **"-CE"** to model number. for additional cost.*

LVCN-140

1 YEAR WARRANTY

LVCN-140 shown larger than actual size.

- **Excellent for High or Low Alarm Conditions and Leak Detection**
- **Controls Pumps, Valves, and Actuators**
- **LED Display Provides User with Sensor Power and Relay Status**
- **10 Amp SPDT Relay**
- **Installs on EN 50 022 35 mm DIN Rail or Panel Mount**
- **0 to 60 Sec Time Delay Dampens Relay Chatter**
- **Selectable Normally Open or Normally Closed Relay States**



SPECIFICATIONS

Voltage Input: Selectable, 120 or 240 Vac, 50 to 60 Hz
Maximum Consumption: 5 watts
Relay Output: Isolated single pole double throw (SPDT) relay, Form C
Switching Mode: Selectable, NO or NC states
Maximum Relay Switching Voltage: 250 Vac, 10 A, ½ HP
Maximum Switched Current: 10 amps
Time Delay: Adjustable from 0.15 to 60 sec.
Maximum Temperature Rating: 70˚C (158˚F)
Sensor Voltage Supply: Nominal 13.5 Vdc, 27 mA max
Sensor Trigger Point: Dry<12 mA, Wet >12 mA

Enclosure Mounting: EN 50 022 standard 35 mm DIN rail or panel mount
Enclosure Material: PP, flame retardant
Dimensions: 6.9 H x 9.9 W x 9.1 cm D (2.7 x 3.9 x 3.6")

The LVCN-140 single sensor controller provides a high or low sensor alarm function with a single sensor input. With a range of dampening adjustments, this controller can compensate for relay chatter. It conveniently mounts to a standard EN50 022 DIN rail and utilizes a 10 amp relay. All functions are fully enunciated with LED lights. Selectable relay state of normally open or normally closed are another feature.

To Order

Model No	Description	Mat'l	Size
LVCN-140	Single sensor controller	PP	2.7 x 3.9 x 3.6"

Comes complete with operator's manual.
*For CE approved controller add suffix **"-CE"** to model number, for additional cost.*
***Ordering Example: LVCN-140** single sensor controller.*

LVCN1700 Series

1 YEAR WARRANTY RoHS

- **Offered in 3 Ranges From 3 to 8 m (9.8 to 26.2')**
- **Configuration is Simple Via Integral Pushbutton Display Module**
- **Three Programmable Relays for Switch, Pump Control and Fail-Safety**
- **LCD Display Indicates Level Height and Relay Status**
- **Narrow 5 or 7.6 cm (2 or 3") Beam Width and Short 4" or 8" Dead Band**
- **PVDF Transducer and NEMA 4X (IP65) Polycarbonate Enclosure**
- **Automatic Temperature Compensation for Accurate Measurement**

OMEGA's LVCN1700 ultrasonic level sensor provides level detection up to 8 m (26.2') with 3 programmable relays for level switch or level control functions, and is configured via the integral pushbutton display module. Each relay can be configured on a single set-point (high level alarm or low level alarm) or latched on two set points for automatic fill or empty in simplex (one pump or valve), duplex (two pumps) or triplex (three pumps) level control modes with selectable time delay and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is broadly selected for pump lift station, sump and day tank level applications.

LVCN1710, inside view.


LVCN1710.

SPECIFICATIONS

Range:
- **LVCN1710:** 10 cm to 3 m (4" to 9.8')
- **LVCN1718:** 20 cm to 5.5 m (8" to 18')
- **LVCN1726:** 20 cm to 8 m (8" to 26.2')

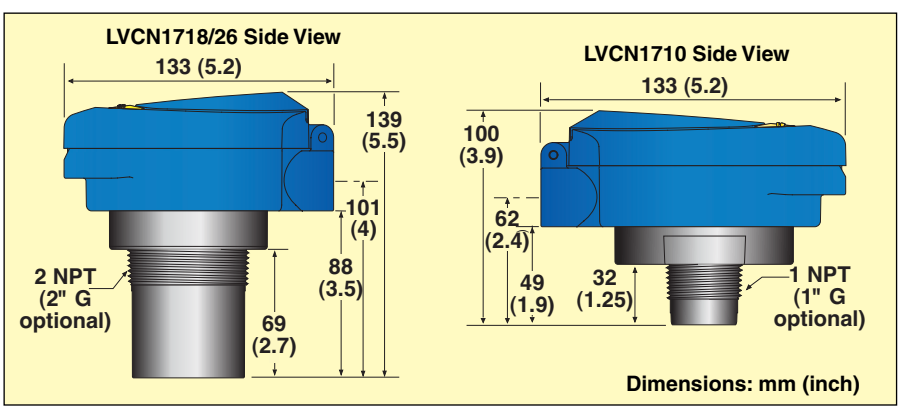
Repeatability: 6.35 mm (0.25")
Dead Band:
- **LVCN1710:** 10 cm (4")
- **LVCN1718/26:** 20 cm (8")

Beam Width:
- **LVCN1710:** 5 cm (2")
- **LVCN1718/26:** 7.6 cm (3")

Configuration: Pushbutton
Memory: Non-volatile
Display Type: LCD, 6-digit
Display Units: Inch, cm, percent, feet or meter
LCD Indication: Level and relay status
Supply Voltage: 95 to 250 Vac
Power: 20 W @ 120 Vac
Contact Type: (3) SPDT relays
Contact Rating: 60 VA, 1A maximum
Contact Fail-Safe: Open, close or hold last
Process Temp: -20 to 60°C (-7 to 140°F)
Temp Comp: Automatic
Ambient Temp: -40 to 71°C (-40 to 160°F)
Pressure: Maximum Working Pressure = 30 psi (2 bar)
Enclosure
- **Rating:** NEMA 4X (IP65)
- **Material:** Polycarbonate
- **Hardware:** Brass and stainless
- **Vent:** Water tight membrane

Trans Material: PVDF
Conduit Entrance: Dual, ½NPT
Process Mount:
- **LVCN1710:** 1 NPT (1" G optional)
- **LVCN1718/26:** 2 NPT (2" G optional)

Mount Gasket: FKM
Classification: General purpose
Compliance: RoHS



To Order *Visit omega.com/lvcn1700 for Pricing and Details*

Model No.	Description
LVCN1710	Ultrasonic level controller 3 SPDT relays, range 3 m (9.8')
LVCN1718	Ultrasonic level controller 3 SPDT relays, range 5.5 m (18')
LVCN1726	Ultrasonic level controller 3 SPDT relays, range 8 m (26.2')
LVM31	Mounting reducer 1 to 2 NPT for LVCN1710

Comes complete with mounting gasket and operator's manual.
*For units with G threads add **"-G"** to model number, for addtional cost.*
***Ordering Example: LVCN1710,** Ultrasonic level controller with 3 SPDT relays and 3 m (9.8') range.*

Rometec srl - www.rometec.it - info@rometec.it - Rometec srl - www.rometec.it - info@rometec.it

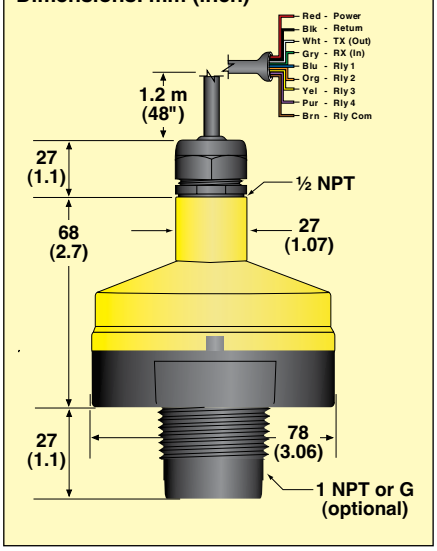
ULTRASONIC LEVEL TRANSMITTER AND CONTROLLER

LVCN210 Series

1 YEAR WARRANTY

- **Level Detection, Switch and Control Functions Up to 3 m (9.8')**
- **Fast and Easy Configuration Via Free Software Download and USB Adaptor**
- **Narrow 5.08 cm (2") Beam Width and Short 10 cm (4") Dead Band**
- **Four Programmable Relays**
- **PVDF Transducer and 6P Polycarbonate Enclosure**
- **Automatic Temperature Compensation For Accurate Measurement**

Dimensions: mm (inch)



OMEGA's LVCN210 Series ultrasonic level transmitter and controller provides continuous level measurement up to 3 m (9.8') with a 4 to 20 mA signal output, and is configured via our free software download. The level sensor has 4 programmable relays with selectable hysteresis and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for day tank, skid, IBC, sump and process tank level applications.

SPECIFICATIONS

Range: 3 m (9.8')
Accuracy: ±0.2% of range
Resolution: 1 mm (0.039")
Dead Band: 10 cm (4")
Beam Width: 5.08 cm (2")
Configuration: Free PC Windows® USB 2.0.The level sensor is configurable via our free PC software and USB adaptor. The sensors are offered with and without USB connectors. Connectors can be used to configure many compatible level products. Download your free copy at: **omega.com/ftp**
Memory: Non-volatile
Supply Voltage: 24 Vdc (loop)
Consumption: 0.5 W
Loop Resistance: 400Ω max
Signal Output: 4 to 20 mA, two-wire
Signal Invert: 4 to 20 mA or 20 to 4 mA
Signal Fail-Safe: 4 mA, 20 mA, 21 mA, 22 mA or hold last
Contact Type: (4) SPST relays
Contact Rating: 60 VA, 1A max
Contact Fail-Safe: Power loss; Hold last
Echo Loss: Open, close or hold last

LVCN210.

Hysteresis: Selectable
Process Temp: -7 to 60°C (20 to 140°F)
Temp Comp: Automatic
Ambient Temp: -35 to 60°C (-31 to 140°F)
Pressure: Maximum Working Pressure = 2 bar (30 psi)
Enclosure Rating: Type 6P, encapsulated, corrosion resistant and submersible
Enclosure Material: Polycarbonate
Trans. Material: PVDF
Cable Jacket Mat: Polyurethane
Cable Type: 9-conductor, shielded
Cable Length: 1.2 m (48")
Process Mount: 1 NPT (1" G optional)
Mount Gasket: FKM
Classification: General purpose
Compliance: CE, RoHS

To Order *Visit omega.com/lvcn210 for Pricing and Details*

Model No.	Description
LVCN210	Level transmitter 4 to 20 mA and 4 relays, and USB connector, range 3 m (9.8')
LVCN210-B	Level transmitter 4 to 20 mA and 4 relays (requires LVCN414-USB), range 3 m (9.8')
LVM-31	Side mounting bracket 1 NPT for schedule 40
LVU800-2N40	2 NPT to 1 NPT reducer for schedule 40
LVCN414-USB	USB connector

Comes complete with mounting gasket and operator's manual.
*For units with G threads add **"-G"** to model number, for additional cost.*
*Configuration software for programming available free at **omega.com/ftp***
***Ordering Example: LVCN210,** level transmitter with relays and USB connector, 1 NPT, 3 m (9.8') range.*

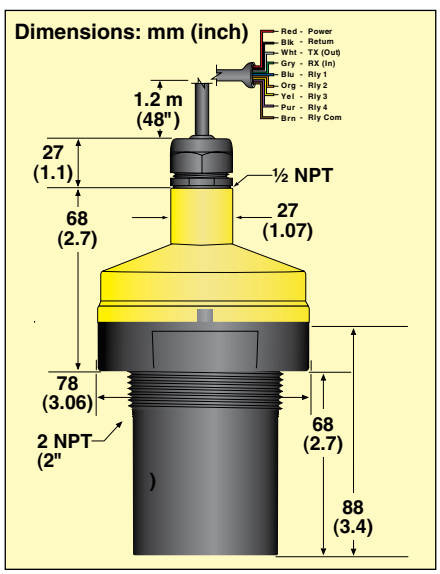
ULTRASONIC LEVEL TRANSMITTER AND CONTROLLER

LVCN318 Series

1 YEAR WARRANTY

- **Level Detection, Switch and Control Functions Up to 5.5 m (18')**
- **Fast and Easy Configuration Via Free Software Download and USB Adaptor**
- **Narrow 7.62 cm (3") Beam Width and Short 20 cm (8") Dead Band**
- **Four Programmable Relays**
- **PVDF Transducer and 6P Polycarbonate Enclosure**
- **Automatic Temperature Compensation for Accurate Measurement**

OMEGA's LVCN318 ultrasonic level transmitter and controller provides continuous level measurement up to 5.5 m (18') with a 4 to 20 mA signal output, and is configured via our free software download via a USB adaptor. The level sensor has 4 programmable relays with selectable hysteresis and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is widely selected for day tank, skid, IBC, sump and process tank level applications.



LVCN318.

SPECIFICATIONS

Range: 5.5 m (18')
Accuracy: ±0.2% of range
Resolution: 2 mm (0.079")
Dead Band: 20 cm (8")
Beam Width: 7.62 cm (3")
Configuration:
USB PC Windows®
USB 2.0 Memory: Non-volatile. The level sensor is configurable via our free PC software and USB adaptor. The sensors are offered with and without USB connectors. Connectors can be used to configure any compatible level product. Download your free copy at: **omega.com/ftp**
Supply Voltage: 24 Vdc (loop)
Consumption: 0.5W
Loop Resistance: 400Ω maximum
Signal Output: 4 to 20 mA, two-wire
Signal Invert: 4 to 20 mA or 20 to 4 mA
Signal Fail-Safe: 4 mA, 20 mA, 21 mA, 22 mA or hold last
Contact Type: (4) SPST relays
Contact Rating: 60 VA, 1A maximum
Contact Fail-Safe: Power loss; hold last
Echo Loss: Open, close or hold last
Hysteresis: Selectable
Process Temperature: -7 to 60°C (20 to 140°F)
Temp Comp: Automatic
Ambient Temperature: -35 to 60°C (-31 to 140°F)
Pressure: Maximum Working Pressure = 2 bar (30 psi)
Enclosure Rating: Type 6P, encapsulated, corrosion resistant and submersible
Encl Material: Polycarbonate
Trans Material: PVDF
Cable Jacket Material: Polyurethane
Cable Type: 9-conductor, shielded
Cable Length: 1.2 m (48")
Process Mount: 2 NPT (2" G optional)
Mount Gasket: FKM
Classification: General purpose
Compliance: CE, RoHS

To Order *Visit omega.com/lvcn318 for Pricing and Details*

Model No.	Description
LVCN318	Level transmitter 4 to 20 mA and 4 relays, and USB connector, 5.5 m (18') range
LVCN318-B	Level transmitter 4 to 20 mA and 4 relays, 5.5 m (18') range (requires LVCN414-USB)
LVM31	Mounting reducer 1 Female NPT to 2 Male NPT
LVCN414-USB	USB connector (1 required for **"-B"** models, sold separately)

Comes complete with mounting gasket, software and operator's manual.
*For units with G threads add **"-G"** to model number, for additional cost.*
*Configuration software for **programming available** free at **omega.com/ftp***
***Ordering Example: LVCN318,** level transmitter with relays and USB connector, 2 NPT 5.5 m (18') range.*

CONDUCTIVE LEVEL CONTROLLERS

LVCN4000 Series

1 YEAR WARRANTY

LVCN4231-36-48-ETFE, shown smaller than actual size.

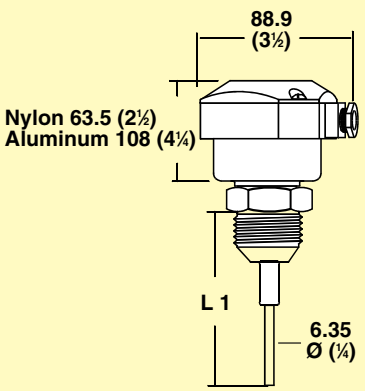
LVCN4121-48-ETFE, shown smaller than actual size.

- Accurate and Reliable Measurement
- Easy Installation
- Rugged Construction
- No Moving Parts
- 100 to 2000 mm (0.33 to 6.5') Rod Lengths Available
- Rod Can be Cut in the Field
- ECTFE/ETFE Coating Available

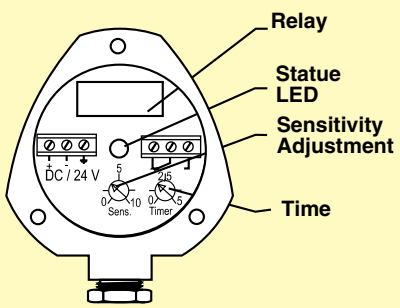
The LVCN4000 Series conductive level switch controllers offer a wide range of customized options to meet any application's need. They are designed to control the level of all conductive media with up to 2 different points of level control.

The LVCN4100 Series has a single rod and is able to control one point of level. The LVCN4200 Series can accommodate up to 2 rods and is able to control 2 points of levels. Both models feature a 24 Vdc power supply and an internal relay that substitutes for an external relay. As with other conductive probes, the rods for these 2 models can be custom-cut and made with any process connection, such as threaded or sanitary. In addition, the electrodes operate on alternating current to prevent electrolyses.

Dimensions: mm (inch)



Wiring Diagram



Ø = diameter

SPECIFICATIONS

Current Consumption: Maximum 2 VA
Temperature Range:
316 SS: -10 to 82°C (-14 to 180°F)
ETFE: -10 to 120°C (-14 to 248°F)
Maximum Pressure: 290 psi (20 bar)
Wetted Materials: 316 SS
Enclosure Material: Glass-filled nylon standard, aluminum optional

Electrical Connection:
½, ¾, 1, 1½ NPT; Tri-Grip™ (Tri-Clamp® compatible) or flange
Output: 5 A SPDT relay (250 Vac maximum)
Time Delay: 0.1 to 5 seconds nominal
Sensitivity Adjustment: 0.5 to 50 kΩ (potentiometer)

Electrodes: 316 SS
Output Voltage of Electrodes: 12V to 100 Hz
Weight: Approx. 2.7 kg (6 lb) for 1.2 m (4')
Protection Class: NEMA 4 (IP65)

To Order

Model No.	Description of Capacitance Transmitter with 4 to 20 mA Output Standard
LVCN4121-48-ETFE	1 rod, ¾ NPT, 48" L, ECTFE/ETFE coated, maximum temperature 120°C (248°F), approx 680 g (1.5 lb)
LVCN4231-36-48-ETFE	2 rods, 1 NPT, 36" L rod and 48" L rod, ECTFE/ETFE coated, 120°C (248°F) approx 1.0 kg (2.3 lb)

Custom Models Available*

Model No.	Description
LVCN41(A)(B)-(C)	Custom conductive level controller, single rod, select process connection (A), enclosure (B), and rod length in inches (C)
LVCN42(A)(B)-(C)	Custom conductive level controller, dual rod, select process connection (A), enclosure (B), and rod length in inches (C)

***** *Rods must be coated when using the probes above 82°C (180°F). All conductive applications must have a reference point, such as the metallic tank wall or another rod for non-metallic tanks.*

Options

Ordering Suffix	Description
A-Process Connection	
1	½ NPT thread
2	¾ NPT thread
3	1 NPT thread
4	1½ NPT thread
5	1.5" Tri-Grip™, sanitary
6	2" flange, ANSI, 150# 316 SS
7	¾" BSP thread
8	1" BSP thread
Others	Consult Engineering with details
B-Enclosure	
1	Glass-filled nylon with ½ NPT conduit and cable gland
2	Aluminum die cast with ½ NPT conduit entry
3	Aluminum die cast with cable gland
C-Rod Length	
Specify Inches	Rod length (inch), 96" maximum
Other Options	
-ETFE	ECTFE/ETFE probe coating

Comes complete with operator's manual.
***Ordering Examples: LVCN4121-48-ETFE,** 1-rod (48") level controller,*
***PSU-93,** unregulated power supply, **70A-1,** alarm.*
***LVCN4231-36-48-ETFE,** 2-rod (36 to 48") level controller.*

Accessories

Model No.	Description
70A-1	Continuous tone alarm
TX4-100	30.5 m (100') spool of 4-conductor wire
PSU-93	Unregulated 24 Vdc power supply

LVCN4000 Series, shown smaller than actual size.

NON-CONTACT LEVEL CONTROLLER FOR SMALL TANK APPLICATIONS

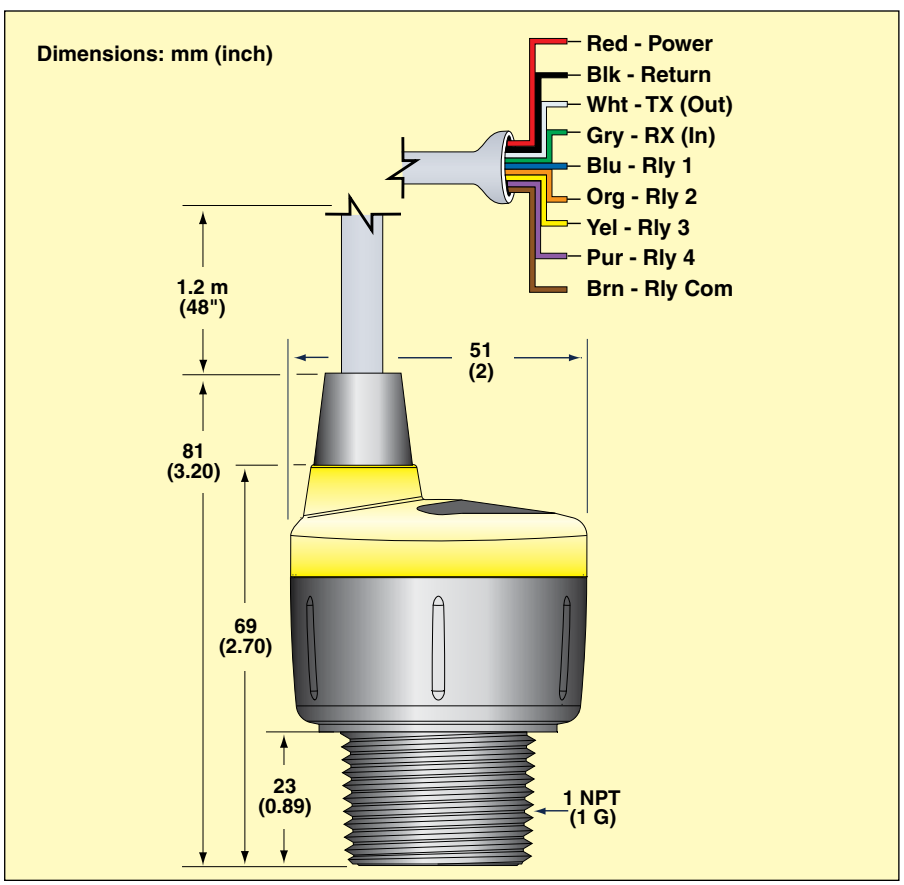
LVCN414 Series

1 YEAR WARRANTY

- Reliable, Non-Contact Replacement for Continuous and Switching Applications
- Compact Sensor Optimized for Small Tank Applications
- Control/Switch Functions for Pumps and Alarms
- PVDF Transducer for Corrosive Liquid Media
- Simple Installation and Setup with USB Connection and Free Software Download From omega.com/ftp
- Current, Voltage and Relay Only Models Available

LVCN414-USB (one required) shown smaller than actual size

LVCN414-B shown smaller than actual size



The LVCN414 Series is a non-contact, ultrasonic level controller and transmitter that delivers reliable, cost-effective, high-performance, small-tank fluid handling control solutions. The LVCN414 targets process, control and chemical feed applications in small tanks mounted on skids, tools or machines. The LVCN414 allows flexibility in applications designed for system integration or retrofit of floats, conductance, and pressure sensors, and is easily configured through a USB connection and the Windows XP compatible software download from **omega.com/ftp**.

The LVCN414 gives precision and accuracy that allows for real-time/ anytime measurement, lowering operational costs and increasing productivity. Level indication for process or control automation applications can be monitored via local display or remote PLC. The LVCN414 is a total small tank level control and measurement solution.

LVCN414-I-B

LVCN414-R-B

LVCN414-V-B

SPECIFICATIONS

Range: 1.25 m (49.2")
Accuracy: 3 mm (0.125")
Resolution: 0.5 mm (0.019")
Beam Width: 5 cm (2")
Deadband: 5 cm (2")
Supply Voltage: 24 Vdc, 12 to 24 Vdc/ Vac (LVCN414-R models)
Loop Resistance: 400 maximum
Consumption: 0.5 W
Signal Output (LVCN414 and LVCN414-I): 4 to 20 mA, 2-wire (when loop powered)
Signal Output (LVCN414-V): 0 to 5 Vdc, 0 to 10 Vdc or 976 to 2000 Hz

Contact Type (LVCN414 and LVCN414-R): (4) SPST relays 1A
Analog Fail-Safety (LVCN414, LVCN414-I and LVCN414-V): Full, empty or hold last
Relay Fail-Safety (LVCN414 and LVCN414-R):
Power Loss: Hold last
Power On: Open, close or hold last
Hysteresis (LVCN414 and LVCN414-R): Selectable
Configuration: Via USB/PC Windows® software download from **omega.com/ftp**
Temperature Compensation: Automatic over range

Temperature: -35 to 60°C (-31 to 140°F)
Enclosure: NEMA 6P (IP68)
Enclosure Material: PC/ABS FR
Strain Relief Material: Santoprene
Transducer Material: PVDF
Cable Length: 1.2 m (4')
Cable Jacket Material: PVC
Process Mount: 1 NPT
Mounting Gasket: FKM
Classification: General purpose
Approvals: CE

To Order

Model No.	Description
LVCN414	Level transmitter 4 to 20 mA and 4 relays, and USB connector, 1.2 m (4') range
LVCN414-I	Level transmitter 4 to 20 mA output, and USB connector,1.2 m (4') range
LVCN414-R	Level switch with 4 relays, and USB connector, 1.2 m (4') range
LVCN414-V	Level transmitter voltage or frequency output, and USB connector, 1.2 m (4') range
LVCN414-B	Level transmitter 4 to 20 mA and 4 relays, 1.2 m (4') range (requires LVCN414-USB)
LVCN414-I-B	Level transmitter 4 to 20 mA output, 1.2 m (4') range (requires LVCN414-USB)
LVCN414-R-B	Level switch with 4 relays, 1.2 m (4') range (requires LVCN414-USB)
LVCN414-V-B	Level transmitter voltage or frequency output, 1.2 m (4') range (requires LVCN414-USB)
LVCN414-USB	USB connector; download configuration software
LVM31	Mounting reducer 1" female NPT to 2" male NPT

Comes complete with operator's manual.
*Configuration software for programming available free at **omega.com/ftp***
***Ordering Example: LVCN414,** level transmitter with relays and USB connector, 1 NPT 1.2 m (4') range.*

LVCN4300 Series

- **Can Operate at High Temperatures and Pressure**
- **Unaffected by Coating Media or Aggressive Products**
- **Accurate and Reliable Switching**
- **Easy Economical Installation**
- **Rugged Construction**
- **No Moving Parts**
- **Functions on Conductive as Well as Non-Conductive Medias**
- **Wide Range of Applications/Industries (i.e. Water, Oils, Corrosives, etc.)**

LVCN4321-12 shown smaller than actual size.

The LVCN4300 Series level switches are flexible, as well as cost effective, level solutions for a great variety of applications. Rods can be encased in PTFE tubing as an option.

The wide range of applications for RF level measurement switches incllude liquids and paste. To cater to all applications, OMEGA's capacitance probes are offered with different designs and features.

Housings must also be compatible with the requirements for hazardous, wash-down, wet, and/or dusty environments. Explosion-proof environments may require the housing to be certified. In addition, the active probe might need to be intrinsically safe or have an intrinsic safety barrier.

The LVCN4300 series point level switch probe works as a remote probe and is compatible with the LVCN400 series relay. This combination allows the electrode to be used in temperatures up to 177°C (350°F). The LVCN4300 is a very compact 316 SS switch.

SPECIFICATIONS

Power Supply for LVCN401: 24 Vdc ±10%
Power Supply for LVCN402: 115 Vac (50/60 Hz)
Power Supply for LVCN403: 230 Vac (50/60 Hz)
Current Consumption: Maximum 2 VA
Adjustment: Potentiometer switch point
Range of Sensitivity: 0.1 to 5 pF
Output: 5A SPDT Relay (250 Vac maximum)
Process Connection: ¾, ½, 1½ NPT, 1½" Tri-Grip™ (Tri-Clamp® compatible) or 2" flange
LVCN4300: 16 mm (⅝") diameter
Electrode Length: 100 to 1800 mm (0.33 to 6') for water; 100 to 600 mm (0.33 to 2') for other materials
Enclosure Material:
Glass filled nylon standard
Dimensions: 89 W x 64 mm H (3½ x 2½")
Aluminum Diecast Temperature Range:
-10 to 120°C (-14 to 248°F)
"-HT" Units: 177°C (350°F)
Maximum Pressure: 290 psi (20 bar)
Level Indication: LED Status on/off
Protection Class for LVCN400: IP40
LVCN4300:
PTFE: 177°C (350°F)
Weight: Sensor 1 kg (2.2 lb) for 24" L
LVCN400: Approx. 227 g (0.5 lb)

LVCN4321-24-PTFE
shown smaller than actual size.

To Order

Model No.	Description of Capacitance Switch
LVCN4321-12	1 rod, requires LVCN400 Series remote electronics, ¾ NPT, 12" L, maximum temperature 177°C (350°F), approx. 680 g (1.5 lb)
LVCN4321-12-PTFE	1 rod, requires LVCN400 Series remote electronics, ¾ NPT, 12" L, PTFE tubed, maximum temperature 177°C (350°F), approx. 680 g (1.5 lb)
LVCN4321-24-PTFE	Point level switch, 1 rod, requires LVCN400 Series remote electronics, ¾ NPT, 24" L, PTFE tubed, max temp 177°C (350°F), approx. 1.4 kg (3.0 lb)
LVCN401	24 Vdc relay electronics for LVCN4300 Series, 83 H x 44 W x 111 D mm (3.25 x 1.75 x 4.37")
LVCN402	115 Vac relay electronics for LVCN4300 Series, 83 H x 44 W x 111 D mm (3.25 x 1.75 x 4.37")
LVCN403	230 Vac relay electronics for LVCN4300 Series, 83 H x 44 W x 111 D mm (3.25 x 1.75 x 4.37")

Accessories

Model No.	Description
TX4-100	30 m (100') spool of 4 conductor wire
PSU-93	Unregulated 24 Vdc power supply

Model No.	Description
LVCN43(A)(B)-(C)	Custom capacitance level switch; order LVCN400 series remote electronics separately; select process connection (A), enclosure (B), and rod length in inches (C)

Ordering Options

Ordering Suffix	Description
A-Process Connection	
1	¾ NPT thread
2	1 NPT thread
3	1½ NPT thread
4	1.5" Tri-Grip™, sanitary
5	2" flange, ANSI, 15016 316 SS
others	Consult Engineering with details
B-Enclosure	
1	Glass filled Nylon with ½ NPT conduit with cable gland
2	Aluminum die cast with ½ NPT conduit entry
3	Aluminum die cast with cable gland entry
C-Rod Length	
C	Rod length (inch); 72" maximum for water; 24" maximum for other media
Other Options	
-SH(D)	Sheath length [D, (inch)], to render portion of probe inactive
-HT	High temperature, 177°C (350°F)
-PTFE	PTFE probe tubing

Comes complete with operator's manual.

Ordering Examples: LVCN4321-12, *custom capacitance system with single fixed rod, 12" length, 1 NPT thread connection, glass filled nylon with ½ NPT conduit with cable gland, and with* ***LVCN401*** *electronics with 115 Vac power.*

LVCN4321-24-PTFE, *capacitance system with single fixed PTFE tubed rod, 24" length, 1 NPT thread connection, glass filled nylon with ½ NPT conduit with cable gland. and with* ***LVCN401*** *electronics with 115 Vac power.*

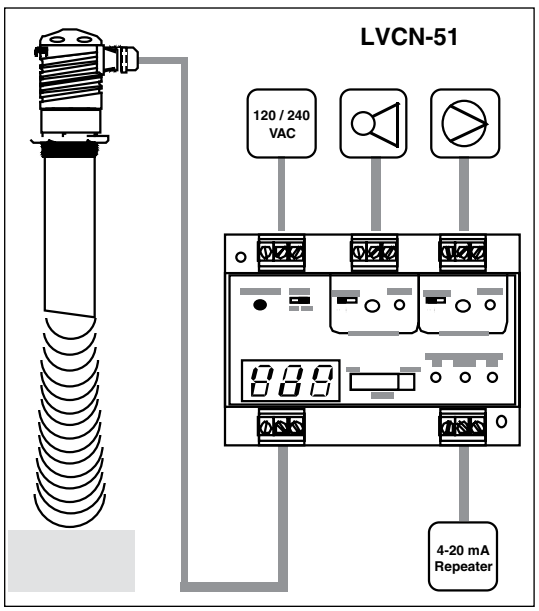
LVCN-51

1 YEAR WARRANTY

- **Universal Proportional Controller with Adjustable Setpoints**
- **Numerical Display and Bar Graph Assists in Programming**
- **Excellent Choice for Use with Continuous Ultrasonic and RF Capacitance**
- **Isolated 4 to 20 mA Proportional Output Reversible**
- **Time Delay Feature Dampens Alarm Chatter**
- **Auto Fill or Empty Capability with Independent Alarm**
- **Scalable in Engineering Units**

LVCN-51 shown larger than actual size.

The LVCN-50 Series proportional controller is both a proportional and an on/off controller. It can easily program up to three continuous process setpoints while viewing a numerical display and bar graph. The controller can be applied universally and is an excellent choice for use with the LVU100 Series continuous ultrasonic and LV3000 Series continuous capacitance level transmitters. It also has a scalable, isolated 4 to 20 mA proportional output to assist in other control functions.



SPECIFICATIONS

Voltage Input: Selectable, 120 or 240 Vac, 50 to 60 Hz @ 5 watts
Maximum Current Consumption: 0.25 amps
Relay Output: Two isolated and sealed single pole, double throw (SPDT) relay
Switching Mode: Selectable, NO or NC states
Maximum Relay Switching Voltage: 240 Vac or 120 Vdc
Maximum Switched Current: 10 amps
Time Delay: Adjustable from 0.15 to 60 secs.
Proportional Output: 4 to 20 mA isolated, invertible
Maximum Temperature Rating: 70°C (158°F)
Sensor Voltage Supply: Nominal 13.5 Vdc, 1 watt maximum
Enclosure Mounting: EN 50 022 standard 35 mm DIN rail or panel mount
Enclosure Material: PP, flame retardant
Dimensions: 9.9 x 7.1 x 9.4 cm (3.9 x 2.8 x 3.7")

To Order

Model No.	Description	Mat'l	Size cm (inch)
LVCN-51	Proportional on/off controller	PP	9.9 x 7.1 x 9.4 (3.9 x 2.8 x 3.7)

Comes complete with operator's manual.
***Ordering Example: LVCN-51** proportional on/off controller.*
*For CE approved controller, add suffix "**-CE**" to model number for additional cost.*

CAPACITIVE (RF) POINT LEVEL SWITCHES

NEW

LVCN6000/7000

1 YEAR WARRANTY

All models shown smaller than actual size.

LVCN7214 LVCN7211 LVCN6241

- **Separate Metal Reference Not Required**
- **Used for Liquids, Solids, Grains and Pastes**
- **Immune to Most Product Build-Up**
- **Programmable Time Delay and Sensitivity Adjustment**

The LVCN6000/7000 Series is a capacitance switch ideal for low and high level detection for both liquid and solids. The LVCN6000/7000 Series can also detect level without being in contact with the product through a sight glass. Unlike other capacitance probes, the LVCN6000/7000 series can detect any type of conductive, non-conductive or low dielectric materials with extremely accurate performance, almost complete immunity from build up, temperature changes or condensation. In applications with plastic or concrete tanks this series does not require an external reference.

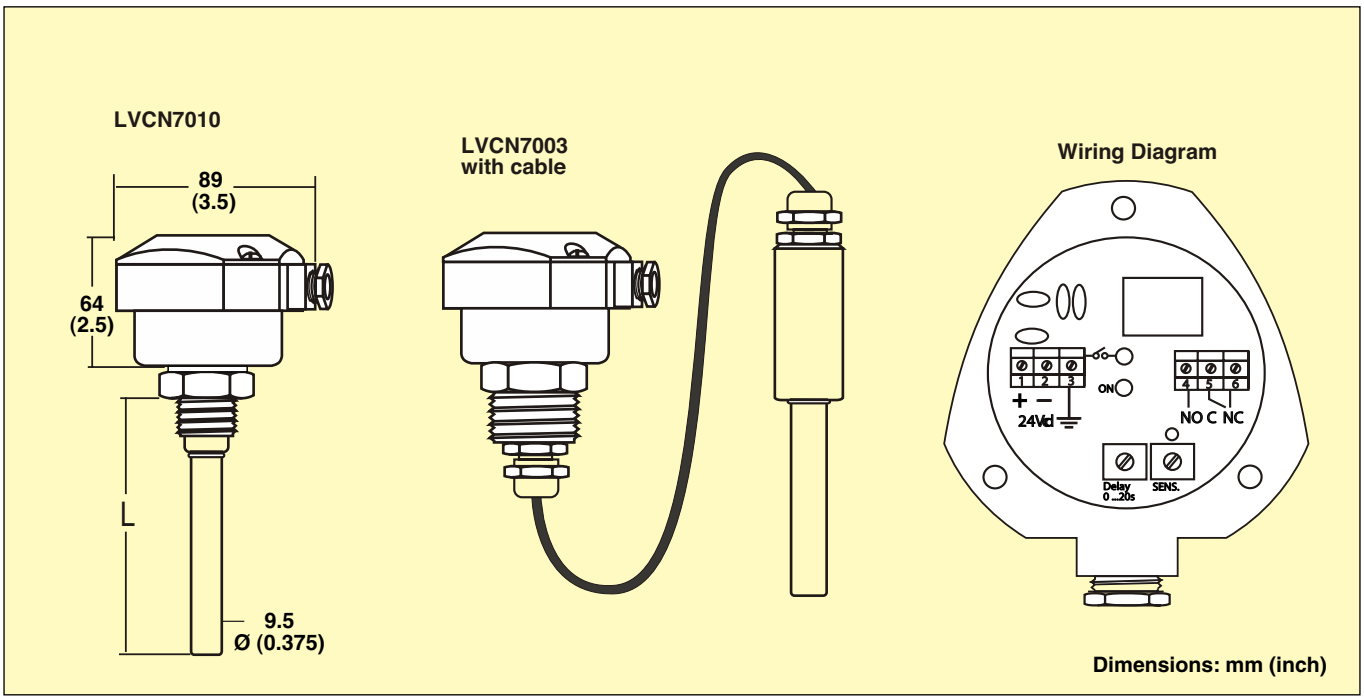
The sensor operates in a manner that is similar to a simple capacitor. A high frequency oscillator is located within the tip of the probe. When the tip of the probe comes in contact with the medium, the frequency of the oscillation reaches a preset point and the detection circuit signals the switch to change state.

The LVCN6000/7000 series is a compact switch that can be made with many types of process connections, such as threaded flange or sanitary. The LVCN6000/7000 series is made with rigid rod or cable and both can be supplied in extended versions. The rigid rod is made with a strong and durable polyacethal plastic for standard units and is also available in PVC or PTFE. Probes are available in 24 Vdc (LVCN7000) or 85 to 240 Vac (LVCN6000) powered versions.

Note: *These switches are not designed for use with mediums with high dielectrics such as mayonnaise or shampoo with high salt content.*

SPECIFICATIONS

Application: Level switch for liquids solids and granular
Operating Voltage:
LVCN7000: 12 to 30 Vdc
LVCN6000: 85 to 240 Vac
Current Consumption:
2 VA (LVCN7000), 4 VA (LVCN6000)
Output: Relay (SPDT) 5A maximum (250 Vac)
Adjustment: Potentiometer switch point
Time Delay: 1 to 20 seconds adjustable
Frequency Oscillation: 5 MHz
Indication: Led status on/off
Electrical Connection: Cable gland ½ NPT conduit (dual ports on large enclosures)
Process Connection: ¾ NPT standard, (BSP, NPT, flange or sanitary mounting optional)
Sensor Tip: Polyoxyimethalene (standard length only), PVC or PTFE optional
Enclosure Material:
LVCN7000: Nylon
LVCN6000: Aluminum
Maximum Pressure: 145 psi (10 bar)
Operating Temperature: -10 to 80°C (14 to 176°F)
Class Protection: NEMA 4 (IP65)



Cable and Custom Built Assemblies

Cable and Custom Ordering Guide LVCN6XYZ (85 to 240 Vac) or LVCN7XYZ (24 Vdc)						
X	**Mounting**	**Y**	**Enclosure**	**Z**	**Construction**	**LENGTH (L)**
1	¾ BSP	1	Small nylon (LVCN7000)	1	316 SS rod Polyoxyimethalene tip (standard length only)	Standard length is 121 mm 4.75" unless otherwise specified maximum rigid probe length is 25 m (8')
2	¾ NPT					
3	1 BSP	2	Large nylon (LVCN6000)	2	316 SS rod PTFE tip	
4	1 NPT					
5	2" Tri-Grip™	3	Small aluminum (LVCN7000)	3	cable PTFE tip	
6	2" 150# SS ANSI					
7	2" 150# PVC ANSI	4	Large aluminum (LVCN6000)	4	PVC rod and tip	

To Order

Model No.	Description	Power	Enclosure	Connection
LVCN6241	Level switch 316 SS rod/Polyoxyimethalene tip	85 to 240 Vac	Large aluminum	¾ NPT
LVCN6242	Level switch 316 SS rod/PTFE tip	85 to 240 Vac	Large aluminum	¾ NPT
LVCN6244	Level switch PVC rod and tip	85 to 240 Vac	Large aluminum	¾ NPT
LVCN7211	Level switch 316 SS rod/Polyoxyimethalene tip	24 Vdc	Small nylon	¾ NPT
LVCN7212	Level switch 316 SS rod/PTFE tip	24 Vdc	Small nylon	¾ NPT
LVCN7214	Level switch PVC rod and tip	24 Vdc	Small nylon	¾ NPT

Comes complete with operator's manual.
Ordering Examples: LVCN6121, *level switch, 85 to 240 Vac power, ¾ BSP mounting, large nylon enclosure with SS 4¾ polyacethal tip.*
LVCN7734. *level switch, 24 Vdc power, 150# PVC flange mount, small aluminum enclosure with PVC rod and tip.*

LVCF/LVCR/LVCP Series

1 YEAR WARRANTY

LVCR-441-12 shown smaller than actual size. LVCR units with removable rods are available with varied rod lengths for custom applications. Consult Flow Engineering for details. Rods can also be shortened in the field.

LVCN-201 relay shown smaller than actual size.

- **Easy to Install and Operate**
- **Rugged Construction**
- **Low Cost**
- **Removable Rods**
- **Up to 5 Points of Level Control**
- **Rods Can be ECTFE/ETFE Coated**
- **Available with 316 SS Tri-Grip™ Sanitary, Flange, or Threaded Connections Models**
- **LVCF (1-5) Fixed Rods**
- **LVCR (1-5) Removable Rods**
- **LVCP (1-5) Pendular Electrodes**
- **CLE-P Pendular Electrode Without the Housing**
- **LVCN-200 Series Controllers**

OMEGA's conductivity level switches offer a wide range of customized options to meet any application's needs. They are designed to control the level of all conductive mediums, offering up to 5 different points of level control. Models are available with fixed rigid rods, with removable rigid rods, or with pendular electrodes attached to the housing with cables.

These switches suit applications involving both alarm point detection and on/off pump valve control. Installation is easy and operation is maintenance-free.

The probes work through the variation of the electrical resistance between the reference electrode and the level-control electrode. Conductivity level switches detect the level resistance when their electrodes are covered by the medium.

An electrically conductive tank wall can be used as the reference electrode. If the tank is made of plastic, concrete, or any other non-conductive material, an additional electrode is required as a reference.

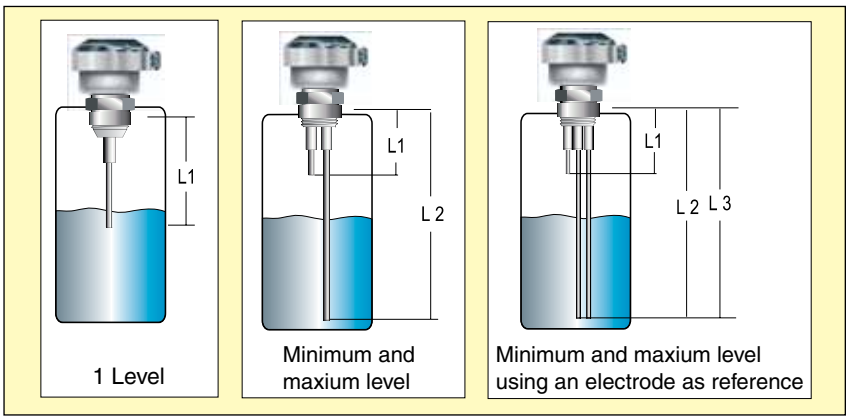
The LVCF switches can accommodate up to five 316 SS fixed rods for 5 different levels of control. The rods are isolated with a TFE bushing and can be coated with ECTFE/ETFE when the probe is used with aggressive or sticky media that cause buildup. The user can easily modify operating levels in the tank by cutting the length of the electrodes. The LVCF switches are rugged and compact and have no moving parts. This makes them reliable for controlling conductive media as well as for high-pressure applications. LVCF models are compatible with LVCN-200 Series controllers only.

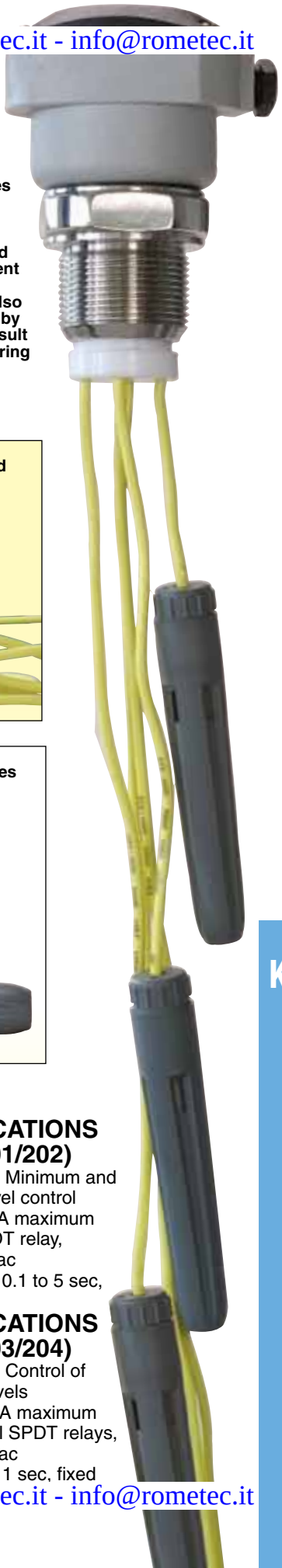
The LVCR models offer the same features as the LVCF, plus removable 316 SS threaded rods that make it possible to switch the rods. Rods can be ordered separately in longer length and can then be custom cut. Removable rods make the system more versatile, easier to handle, and more forgiving if the rod's length is cut incorrectly. LVCR models are compatible with LVCN-200 Series controllers only.

Along with the same features as the rigid rod probes, LVCP pendular probes can accommodate up to 5 model CLE-P electrodes. The LVCP probes are ideal for deep measurements in wells or large tanks where long rods would be impractical, but they work equally well for shorter-length applications. The electrodes are suspended from PVC cables that allow for longer lengths, as well as for different applications and installations. LVCP models are compatible with LVCN-200 controllers.

The electrode model CLE-P is the simplest version of all conductivity probes. A small polypropylene

LVCR Mounting Diagram





LVCP, shown smaller than actual size. LVCP switches are available with varying cable lengths to monitor and control different fluid levels. Cables may also be shortened by the user. Consult Flow Engineering for details.

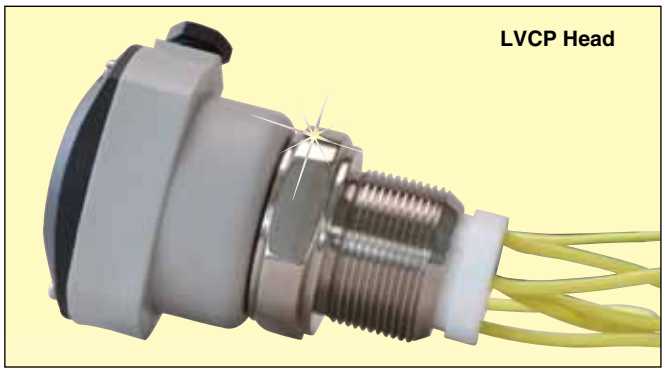
enclosure houses a 316 SS rod that is attached to a PVC cable. This option eliminates the need for a process connection.

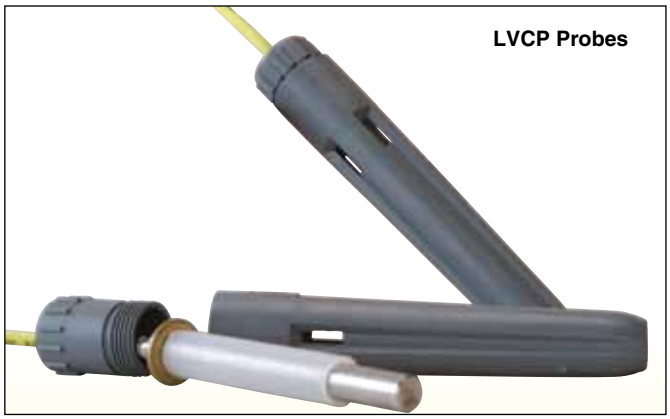
LVCN-200 Series conductive liquid on/off level controllers are used to power all level probes. The LVCN-200 models are electronically controlled devices that open and close an electrical contact to effect the operation of other devices in the same, or another, electrical circuit.

The LVCN-201/202 models can control the differential of minimum and maximum level, with an adjustment for sensitivity. The relay has 1 reverse SPDT contact.

The LVCN-203/204 models control 2 independent levels and 2 reverse SPDT contacts. They also include a sensitivity adjustment.

The LVCN-200 Series is designed so that multiple units can be used in combination to provide a variety of control functions, including multiple alarms and on/off control for alternating pumps. Both models are available with DIN rail sockets or with screws.





SPECIFICATIONS (LVCF/LVCR/LVCP)

Electrical Connection: Cable gland with ½ NPT conduit
Electrodes: Available in configurations from 1 to 5 electrodes
Fixed Rod Length: 100 mm to 2 m (3.9" to 6.5')
Pendular Cable Length: 500 mm (19.7") to 20 m (65.6')
Enclosure: Glass filled nylon or die cast aluminum; NEMA 4 (IP65)
Operating Ambient: -10 to 120°C (14 to 248°F); 20 bar (290 psi) maximum

COMMON SPECIFICATIONS (LVCN-200)

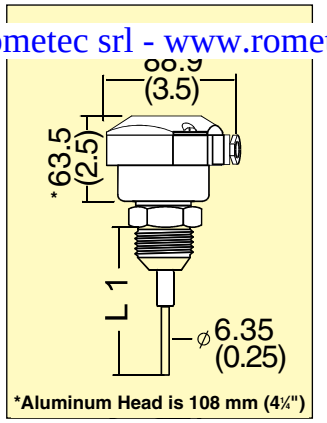
Power: 24 Vdc ±10%, 115 or 230 Vac (50/60 Hz)
Sensitivity: 0.5 to 50 kΩ; potentiometer adjust
Operating Ambient: -10 to 60°C (14 to 140°F)
Enclosure: ABS; DIN rail mount or screw attachment; IP40 protection

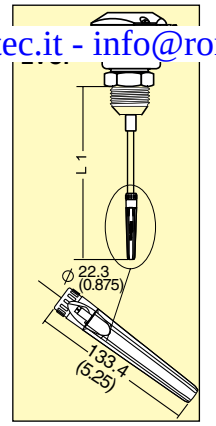
SPECIFICATIONS (LVCN-201/202)

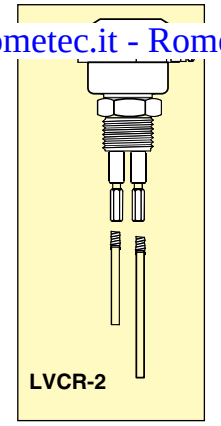
Application: Minimum and maximum level control
Current: 2 VA maximum
Output: SPDT relay, 5 A @ 250 Vac
Time Delay: 0.1 to 5 sec, adjustable

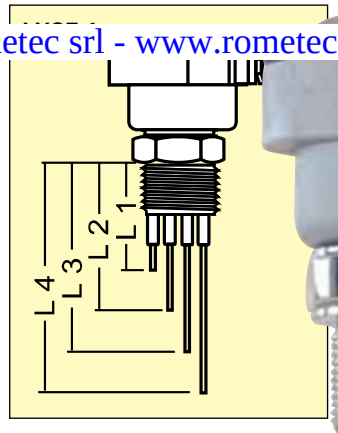
SPECIFICATIONS (LVCN-203/204)

Application: Control of 2 different levels
Current: 3 VA maximum
Output: Dual SPDT relays, 5 A @ 250 Vac
Time Delay: 1 sec, fixed



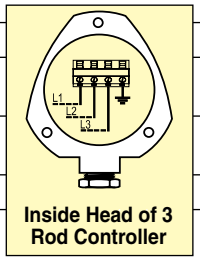


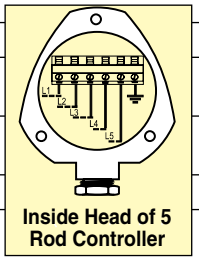


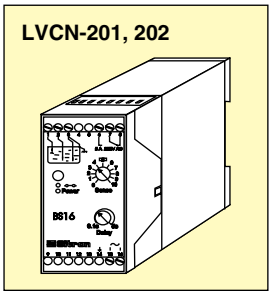


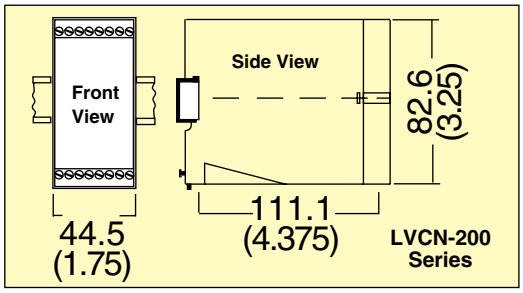
Dimensions: mm (inch) ø = diameter

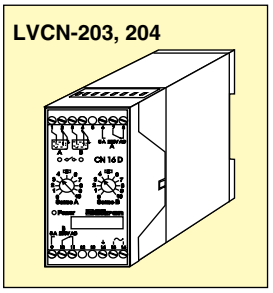
Application	Point level of conductive liquids in tanks and pipes				
Process Connection	½ to 1½ NPT or BSP 1½" sanitary or flange	¾ to 1½ NPT or BSP 1½" sanitary or flange	1 to 1½ NPT or BSP 1½" sanitary or flange	1½ NPT or BSP 2" sanitary or flange	2" sanitary or flange
Electrical	Cable entry or ½ NPT conduit entry				
Electrode	1 fixed rod	2 fixed rods	3 fixed rods	4 fixed rods	5 fixed rods
	1 removable rod	2 removable rods	3 removable rods	4 removable rods	5 removable rods
	1 pendular by cable	2 pendular by cable	3 pendular by cable	4 pendular by cable	5 pendular by cable
Length (L)	**Rod:** 100 mm to 2 m (3.9" to 6.56')				
	Cable: 500 mm to 20 m (19.7" to 65.6')				
Enclosure Material	Glass-filled nylon or aluminum die cast				
Temperature	-10 to 120°C (14 to 248°F)				
Max Pressure	290 psi (20 bar)				
Class Protection	NEMA 4 (IP65)				











Application	Control of Min and Maximum Level for Conductive Level Probes	Control of 2 Different Levels for Conductive Level Probes
Operating Voltage	24 Vdc (±10%) or 115 or 230 Vac (50/60 Hz)	24 Vdc (±10%) or 115 or 230 Vac (50/60 Hz)
Current Consumption	2 VA	3 VA
Sensitivity Adjustment	0.5 to 50 kΩ (potentiometer)	0.5 to 50 kΩ (potentiometer)
Output	5 A maximum, 250 Vac relay (SPDT)	5 A maximum, 250 Vac relay (2-SPDT)
Time Delay	0.1 to 5 seconds	1 second
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)
Enclosure Material	ABS	ABS
Mounting	DIN rail or screws	DIN rail or screws
Class Protection	IP40	IP40

To Order

Model No.	Description
LVCF-111-12-ETFE	Fixed rod conductivity level switch; one 12" rod, ½ NPT process connection, nylon enclosure, ECTFE/ETFE coating
LVCF-231-24-ETFE	Fixed rod conductivity level switch; two 24" rods, 1 NPT process connection, nylon enclosure, ECTFE/ETFE coating
LVCR-231-60	Removable rod conductivity level switch; two 60" rods, 1 NPT process connection, nylon enclosure
LVCR-341-72	Removable rod conductivity level switch; three 72" rods, 1½ NPT process connection, nylon enclosure
LVCP-121-96	Pendular rod conductivity level switch; one electrode, 96" cable, ¾ NPT process connection, nylon enclosure
LVCP-231-96	Pendular rod conductivity level switch; two electrodes, 96" cables, 1 NPT process connection, nylon enclosur
LVCP-341-96	Pendular rod conductivity level switch; three electrodes, 96" cables, 1½ NPT process connection, nylon enclosure

Switch Sensors

Model No.	Description
LVCF-(A)(B)(C)-(D)	Custom fixed rod conductivity level switch; select number of rods (A), process connection (B), enclosure (C) and rod length in inches (D)
LVCR-(A)(B)(C)-(D)	Custom removable rod conductivity level switch; Select number of rods (A), process connection (B), enclosure (C), and rod length in inches (D)
LVCP-(A)(B)(C)-(D)	Custom pendular conductivity level switch; Select number of electrodes (A), process connection (B), enclosure (C), and cable length in inches (D)

Ordering Options

Order Suffix	Description
A-Rods/Electrodes	
1	1 rod/electrode; single point detection
2	2 rods/electrodes; minimum/maximum detection
3	3 rods/electrodes; 3-point detection
4	4 rods/electrodes; 4-point detection
5	5 rods/electrodes; 5-point detection
B-Process Connection	
1	½ NPT thread (LVCF-1, LVCR-1, LVCP-1 only)
2	¾ NPT thread (LVCF/LVCR/LVCP-1 or 2 only)
3	1 NPT thread (LVCF/LVCR/LVCP-1, 2 or 3 only)
4	1½ NPT thread (LVCF/LVCR/LVCP-1, 2, 3 or 4 only)
5	1.5" Tri-Grip™, sanitary (LVCF/LVCR-1, 2 or 3 only)
6	2" flange, ANSI, 316 SS (all models)
7	2" Tri-Grip™, sanitary (LVCF/LVCR-1, 2, 3 or 4 only)
C-Enclosure	
1	Glass filled nylon with ½ NPT conduit with cable gland
2	Aluminum die cast with ½ NPT conduit entry
3	Aluminum die cast with cable gland entry
D-Rod Length/Cable Length	
Specify	Fixed rod length (inch) for LVCF
Specify	Removable rod length (in) for LVCR
Specify	Cable length (inch) for LVCP
ETFE Coating	
-ETFE	ECTFE/ETFE coating for LVCF or LVCR rod sensors

LVCR-441-12, shown smaller than actual size.

Controllers

Model No.	Description
LVCN-201	Min/max level controller, 24 Vdc power
LVCN-202	Min/max level controller, 115 Vac power
LVCN-202-230VAC	Level controller for 2 independent levels, 230 Vac power
LVCN-203	Level controller for 2 independent levels, 24 Vdc power
LVCN-204	Level controller for 2 independent levels, 115 Vac power
LVCN-204-230VAC	Minimum/maximum level controller, 230 Vac power

Comes complete with operator's manual.

***Ordering Examples: LVCF-111-12-ETFE,** 1 fixed rod, **LVCN-202,** controller, **70A-1,** alarm.*
***LVCP-231-96,** 2 pendular electrode switch, **LVCN-204,** controller, **70A-1,** alarm,*

Accessories

Model No.	Description
70A-1	Continuous tone alarm
TX4-100	30.5 m (100') spool of 4-conductor wire
PSU-93	Unregulated power supply
LVCR-(**)	Replacement rods for LVCR Series
CLE-P	Electrode

***** Specify rod length (in inches): 12, 24, 36, 60.*

ROTARY PADDLE LEVEL SWITCHES

LVD-800 Series

1 YEAR WARRANTY

- Reliable Magnetic Technology
- Twist On/Off Cover—No More Bolts!
- Wiring Access—2 Conduit Entrances
- Motor Shuts Off When Paddle is Impeded Significantly Extends Motor Life and Reduces Maintenance Costs
- Local Status Indicating Light on Most Models
- Standard Units Rated to 121°C (250°F)
- Hi-Temp Models Rated to 399°C (750°F)

The LVD-800 Series fail-safe bin monitor is the state-of-the-art in rotary paddle technology. Utilizing magnetic sensing technology and a unique housing design, the LVD-800 Series fail-safe bin monitor is the most reliable, technician-friendly, rugged and economical truly fail-safe rotary paddle point level control sensor of its kind.

The LVD-800 Series fail-safe bin monitor provides the ultimate in performance wherever critical continuous operation must be ensured. Detection of both material presence and its own operational status is performed on a continuous basis. The LVD-800 Series fail-safe level sensor monitors its electrical and mechanical operating condition. This, in conjunction with separate outputs provided for material sense and unit status (fault conditions) makes this unit a "truly" fail-safe device.

While the LVD-800 Series fail-safe bin monitor is an evolution in rotary paddle technology, it continues to use tried-and-true operating techniques. Unlike many other available units, the LVD-800 Series incorporates a feature that automatically shuts off its motor when the paddle is in a stalled condition. This extends the life of the unit and minimizes maintenance.

LVD-803 shown smaller than actual size.

Principle of Operation

The operation of the LVD-800 Series rotary paddle fail-safe bin monitor uses magnetic sensing technology to detect both material presence and operational status of the unit. This method is simple and more reliable than that used by other manufacturers. The unit is installed through the wall of the vessel so that the paddle protrudes inside the vessel. A small electric motor drives the paddle, which rotates freely in the absence of material.

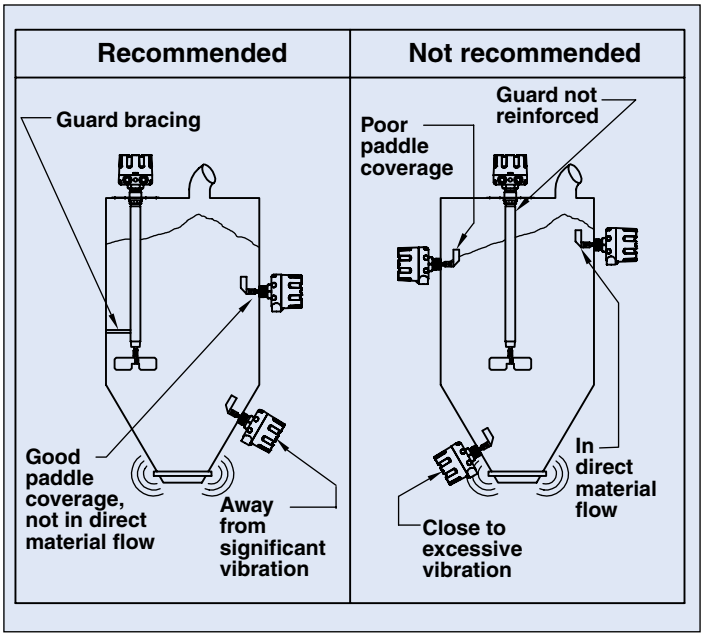
The rotation of the unit's shaft is continuously monitored by detection of a magnetized rotating disk. When the paddle is impeded by material, the shaft rotation stops. The motor rotates within the housing and magnetized sections of the motor mounting plate are detected. Use of these magnetic sensing techniques eliminates problems that may occur with fouling of the optical systems used by other brands.

The built-in microcontroller performs self-diagnostics and monitors both shaft and motor mounting plate rotation. This allows the unit to easily distinguish between material presence and any electrical and mechanical failure of the unit. When material presence is detected, the SENSE relay changes state and the drive motor is de-energized to extend motor life. This output is available to control a process function or alarm circuit. When the material level drops, a tension spring returns the drive motor to its original running condition and is reactivated.

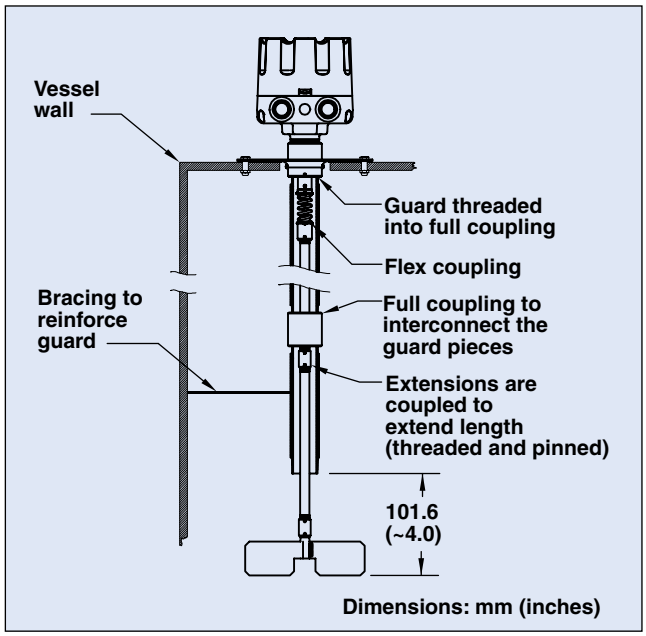
A unit failure is detected by sensing a lack of shaft rotation while material presence has not been detected by rotation of the motor mounting plate. In a failure condition the independent FAULT relay will change state indicating that an error condition exists. Monitoring the state of both the SENSE and FAULT relays provides the most flexibility for control and fail-safe monitoring.

The rugged and reliable design of the LVD-800 Series fail-safe bin monitor makes it the best choice for critical level control applications. The unit is compatible with many granular, pelletized and powder bulk applications. It can be utilized for high level indication of materials over 160 kg/m^3 (10 lb/ft^3) and for low and intermediate level indication for materials over 80 kg/m^3 (5 lb/ft^3). The LVD-800 Series bin level monitor can be installed almost anywhere dry bulk materials are stored including bins, hoppers, silos and tanks.

Installation considerations



Extension and guard installation



SPECIFICATIONS

Power Requirements: 115 Vac (±15%); 9 VA; 50/60 Hz; 230 Vac (±15%); 9 VA; 50/60 Hz
Ambient Operating Temperature: -40 to 65°C (-40 to 150°F)
Internal Bin Temperature*:
Standard Unit: to 121°C (250°F)
Hi-Temp Unit: to 399°C (750°F)
Conduit Connection: Two (2) ¾ NPT

Outputs

Material Sense: One SPDT; 5A @ 250 Vac, 30 Vdc maximum
Unit Status (Fault): One SPDT; 5A @ 250 Vac, 30 Vdc maximum
Maximum Pressure: 30 psi (2 bar)
Sensitivity: 80 kg/m³ (5 lb/ft³) minimum material density (when using large 3-vane paddle)
Indicators: Red and green high intensity LEDs indicate material sense and unit status conditions (Ordinary Location unit only)
Housing: Die cast alum, NEMA-4, IP66
Housing Finish: Powder coating
Mounting Connection: 1¼ NPT
Weight: Approx. 3.9 kg (8.5 lb)

Materials of Construction/ Accessories

Flexible Couplings: 304 stainless steel
Mounting Plates: Carbon steel or 304 stainless steel
All Paddles Except Ex-Flex: 304 SS
Ex-Flex Belt: 304 SS coupling, rubber/fabric blend belt
Flexible Cable Extension: 304SS ¼" diameter

Listings/Approvals

Hazardous Locations: Class I, Div. Groups C, D; Class II, Div. 1 & 2, Groups E, F, G, CE Mark

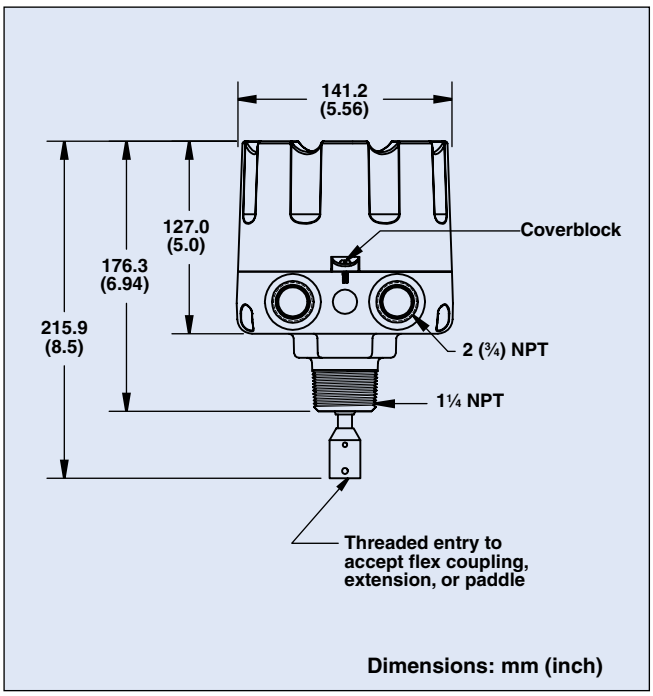
Typical Applications include, but are not limited to (density)

See Material Characteristics Guide for additional information.

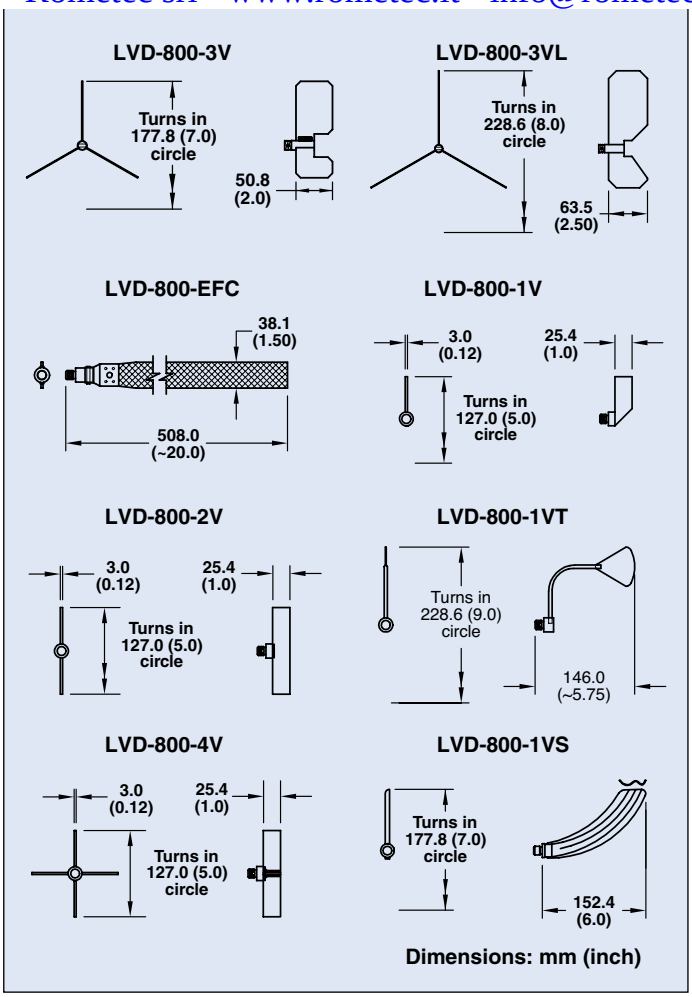
Feed – Ground Corn 560 kg/m³ (35 lb/ft³)	**Silica Sand** 1520 kg/m³ (95 lb/ft³)
Rocks – Limestone Crushed 1360 to 1520 kg/m³ (85 to 95 lb/ft³)	**Pellets – Polypropylene** 544 to 576 kg/m³ (34 to 36 lb/ft³)
Wood Shavings 48 to 160 kg/m³ (3 to 10 lb/ft³)	**Coffee – Roasted Beans** 352 to 480 kg/m³ (22 to 30 lb/ft³)
Rubber – Ground 400 to 800 kg/m³ (25 to 50 lb/ft³)	**Metals – Iron Chips** 2640 kg/m³ (165 lb/ft³)
Tea Leaves 192 kg/m³ (12 lb/ft³)	**Coal – Lump** 400 to 800 kg/m³ (25 to 50 lb/ft³)
Peanuts – Shelled 560 to 720 kg/m³ (35 to 45 lb/ft³)	**Malt – Ground – Dry** 320 kg/m³ (20 lb/ft³)
Clays – Kaoline 320 to 960 kg/m³ (20 to 60 lb/ft³)	**Ash – Coal Dry** 560 to 720 kg/m³ (35 to 45 lb/ft³)
Talcum Powder 736 to 992 kg/m³ (46 to 62 lb/ft³)	**Grain – Oats** 400 to 560 kg/m³ (25 to 35 lb/ft³)
Acrylic Resin 528 kg/m³ (33 lb/ft³)	**Sugar – Granulated** 880 kg/m³ (55 lb/ft³)
Flour – Wheat 480 to 560 kg/m³ (30 to 35 lb/ft³)	**Sawdust** 64 to 192 kg/m³ (4 to 12 lb/ft³)
Cement Powder – Portland 1360 to 1520 kg/m³ (85 to 95 lb/ft³)	

***** *Influenced by mounting, material thermal conductivity and ambient temperature.*

Enclosure dimensions



Accessory (paddles sold separately)



To Order

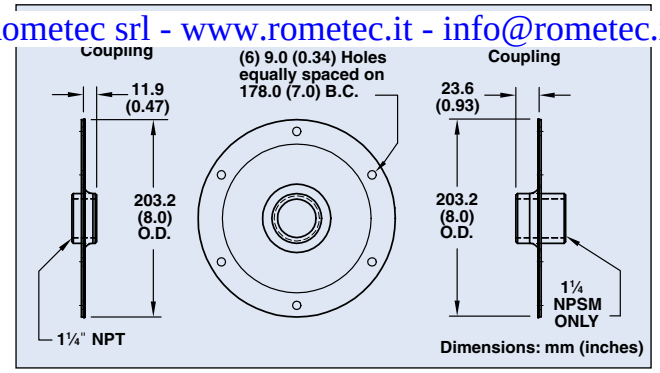
FAIL SAFE Models	Description
LVD-803	Dry level switch, 115 Vac, 1¼ NPT
LVD-803-EXP	Dry level switch, class 1, div. 1 and 2, groups C, D; class II, div. 1 and 2, groups E, F, G
LVD-804	Dry level switch, 230 Vac, 1¼ NPT

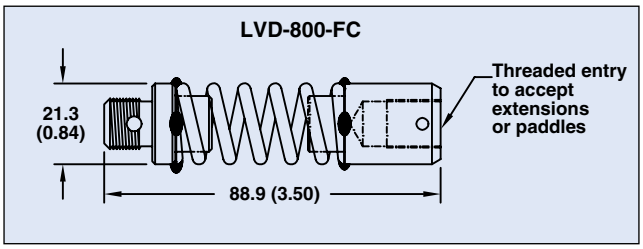
***** *Order paddles separately.*
Comes complete with operator's manual.
*For 24 Vdc power add suffix "**-24VDC**" to **LVD-803** model number, for additional cost.*
*For SS (top or vertical mount only) add suffix "**-HT**" to model number for high temp version (750°F), for additional cost.*

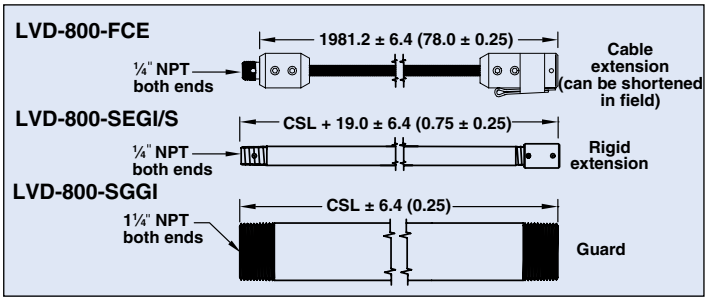
Paddles (Required) *See Material Characteristics Guide for reference.*

Model No.	Description
LVD-800-1V	1 Vane insertable** for low level control of avg. weight [>320 kg/m³ (20 lb/ft³)] material or low to high level control of heavy materials 38 mm (1½") diameter
LVD-800-3V	3 Vane standard for average weight [>240 kg/m³ (15 lb/ft³)] materials
LVD-800-3VL	3 Vane large for light weight material [>160 kg/m³ (10 lb/ft³)]
LVD-800-1VS	1 Vane insertable** scimitar for light to average weight [>320 kg/m³ (20 lb/ft³)] material
LVD-800-2V	2 Vane for heavy materials [>1200 kg/m³ (75 lb/ft³)] under 1½" in diameter
LVD-800-4V	4 Vane for use with average to heavy weight materials [>1200 kg/m³ (75 lb/ft³)]
LVD-800-1VT	1 Vane triangular for light to average weight material; top down mount only for long fibrous materials
LVD-800-EFC	Ex-flex 3-ply 508 mm (20") belt vane for heavy materials over 51 mm (2") in diameter (top mount only) [>1200 kg/m³ (75 lb/ft³)]

** *Insertable paddles eliminate the need for mounting plate.*
***LVD-800-1VS** is insertable through either a half or full 1¼" coupling, that is welded to the bin wall.*
***LVD-800-1V** is insertable through a half 1¼" coupling.*







Accessories

Model No.	Description
LVD-800-FC	Flexible coupling spring flex for absorbing heavy loads, side loads and protect internal workings which extends the life of the paddle
LVD-800-SGGI-6††	†Shaft guard 1¼" pipe, SCH40, galvanized iron (additional cost per inch)
LVD-800-SGSS-6††	†Shaft guard 1¼" pipe, SCH40, stainless steel (additional cost per inch)
LVD-800-FCE	Flexible cable extension, 304SS, 1.98 m (78") (can be cut in field) eliminates the need for a mounting plate, extension guard and flexible coupling (additional cost per inch)
LVD-800-SEGI-6††	††Solid shaft extension: ¼" pipe, SCH40, galvanized (additional cost per inch)
LVD-800-SESS-6††	††Solid shaft extension: ¼" pipe, SCH40, stainless steel (additional cost per inch)
LVD-800-MPHCS	Mounting plate with 1¼ NPT half coupling, carbon steel, for side mount installations
LVD-800-MPFCS	Mounting plate with 1¼ NPT full coupling, carbon steel, for top mount installations where a shaft extension and shaft guards are required
LVD-800-MPHSS	Mounting plate with 1¼ NPT half coupling, stainless steel, for side mount installations
LVD-800-MPFSS	Mounting plate with 1¼ NPT full coupling, stainless steel, for top mount installations where a shaft extension and shaft guards are required
LVD-800-MPA	Mounting plate with 1¼ NPT heavy duty aluminum for flat surfaces or thin walled vessels where extra strength is required

† *Shaft guards are required for use with solid shaft extensions to limit the movement caused by side loading that would otherwise damage the working components of the paddle unit. Shaft guards should be the same length as the extension and should always be used when the extension meets or exceeds 460 mm (18") in length.*

†† *Extension and guard lengths [not to exceed 3.6 m (144") in length]*

Comes complete with operator's manual.

*For 24 Vdc power add suffix "**-24VDC**" to **LVD-803** model number, for additional cost.*

*For SS (top or vertical mount only) add suffix "**-HT**" to model number for high temp version (750°F), for additional cost.*

***Ordering Examples: LVD-803-EXP,** switch, 115 Vac class I, div. 1 and 2 groups C & D; class II, div. 1 and 2, groups E, F, G rated and **LVD-800-3V,** 3 vane paddle for average weight (15 lb/ft³) material.*

***LVD-803,** switch, 115 Vac, and **LVD-800-1V,** 1 vane insertable paddle for average weight (20 lb/ft³) material.*

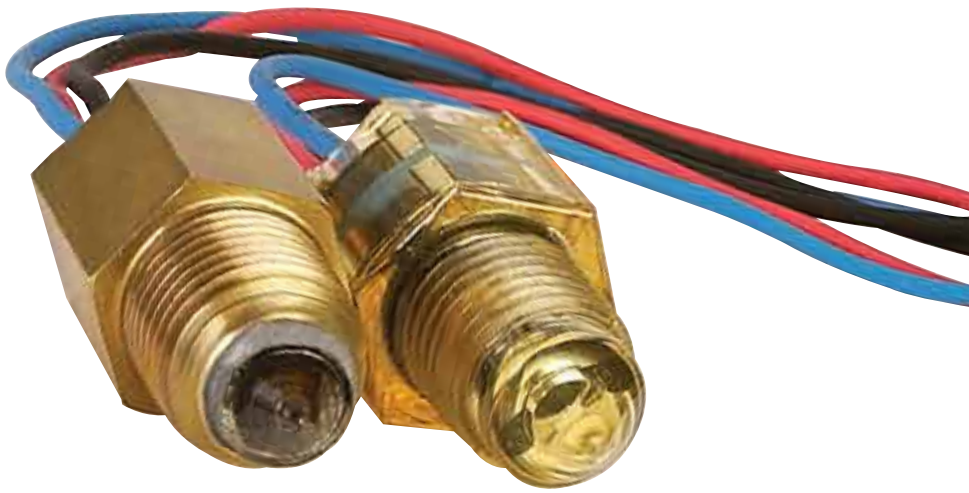
Replacement Parts

Model No.	Description
LVD-800-SR	Spiral roll pin, 3.18 x 4.76 mm (⅛ x 3⁄16") SS (connects paddle to solid shaft coupling)
LVD-800-GDP	Grooved dowel pin, 3.18 x 15.88 mm (⅛ x ⅝") SS (connects solid shaft coupling to shaft)
LVD-800-DM115	Drive motor assembly for LVD803 (115 Vac, 50/60 Hz)
LVD-800-DM230	Drive motor assembly for LVD803 (230 Vac, 50/60 Hz)
LVD-800-DM24DC	Drive motor assembly for LVD803 (24 Vdc)
LVD-800-MS	Micro seal
LVD-800-MMP	Motor mounting plate assembly
LVD-800-B	Bearings (2 required per unit)
LVD-800-DS	Stainless steel drive shaft with slip clutch and gear assembly
LVD-800-RR	Retaining ring (for retaining the motor mounting plate to drive shaft)
LVD-800-RS	Return spring assembly

LVE-950 Series

1 YEAR WARRANTY

- **Polysulfone or Brass Construction**
- **Smallest Electro-Optical Sensor Available**
- **No Moving Parts**

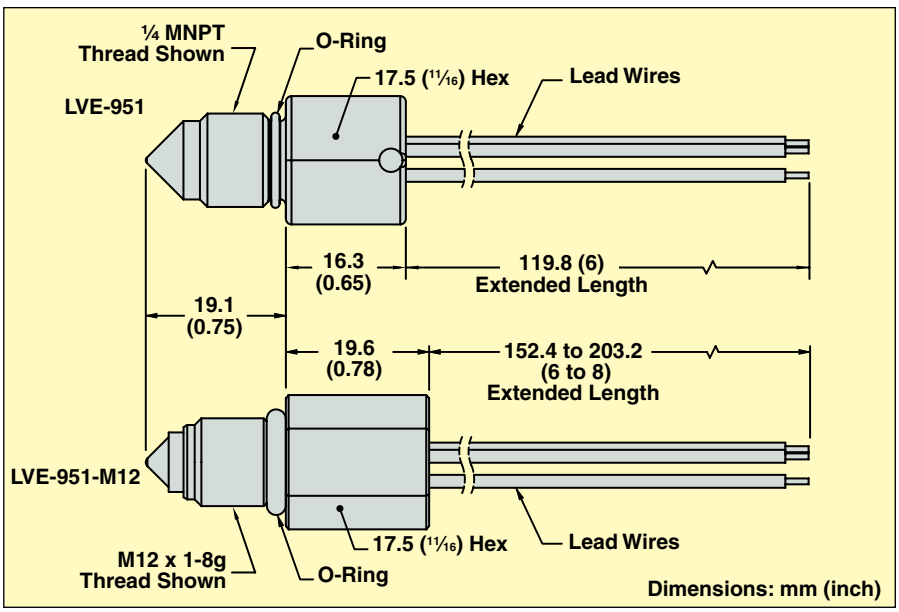


LVE-951-B

Both models shown larger than actual size.

LVE-951

The LVE-950 Series are the smallest electro-optic liquid level sensors OMEGA offers, they also carry a high operating temperature capability at 110°C (230°F). The Polysulfone housing ensures this sensor is compatible for use in a broad range of media. The LVE-950 design features an over-molded electronics insert, TPE insulated wires, and fluorosilicone O-ring seals that create a water-tight, environmentally resistant assembly. With its brass housing and fused glass prism, the LVE-951-B is built to be more durable in challenging environments, including outdoors and engine bays. The LVE-950 is a perfect choice for industrial applications desiring an extremely small, 'no-moving-parts' sensor rated for high temperatures.



SPECIFICATIONS

Housing Material:
LVE-951: Polysulfone
LVE-951-B: Brass
O-Ring: Fluorocarbon (¼ MNPT - none)
Electronics: Over-molded TPE
Operating Pressure: 0 to 250 psi (0 to 17 bar) maximum
Operating Temperature: -40 to 110°C (-40 to 230°F)*
Power: 12 Vdc ±10%
Current Consumptions (No Load): 12 Vdc 10 mA
Output: Sink 40 mA maximum, up to 30 Vdc
Repeatability: ±1 mm
Lead Wires: 3x TPE insulated; 22 AWG

** These switches are not for use in freezing liquid or steam/high condensation environments.*

To Order

Model No.	Description
LVE-951	Optical polysulfone level switch,12 Vdc wet sink, ¼ MNPT
LVE-952	Optical polysulfone level switch, 12 Vdc dry sink, ¼ MNPT
LVE-951-M12	Optical polysulfone level switch,12 Vdc wet sink, M12 x 1-8 thread
LVE-952-M12	Optical polysulfone level switch, 12 Vdc dry sink, M12 x 1-8 thread
LVE-951-B	Optical brass level switch, 12 Vdc wet sink, ¼ MNPT
Accessories	
LVE-950-R	DC relay board higher current loads, power 120 Vac
LVE-950-R-NEMA4	DC switchbox higher current loads, power 120 Vac NEMA 4

Comes complete with operator's manual.

Ordering Example: LVE-951, *Polysulfone optical level switch, 12 Vdc wet sink with* ***LVE-950-R-NEMA4*** *DC switchbox 120 Vac power.*

LVF-200A-R Series

1 YEAR WARRANTY

- **Pulsed, Infrared Light Excitation (Leak Detection Solution)**
- **SPST Relay Standard**
- **Impervious to Most Ambient Light Conditions**
- **Mounted any Orientation, Wet or Dry**
- **NEMA 6 (IP68) Submersible Sensor and Cable**

The LVF-200A-R Series optic sensor creates a pulsed beam of infrared light which is reflected on the oblique flat sensor tip. If the tip is dry, the light beam is recognized and if it is wet, the beam reflects back into the liquid. The optic sensor is factory calibrated for use with clear or translucent liquids. The shape and optic characteristics of the oblique flat optical surface provide a high level of optical efficiency, including resistance to ambient light and process condensation. Although the sensor offers very broad liquid compatibility, it is not recommended for use with coating or highly specular liquids. Ideal for leak detection.

Specifications

Accuracy: ±1 mm (0.04") in water
Repeatability: ±0.5 mm (0.02") in water
Operating Principle: Pulsed, infrared light beam
Voltage Input: 12 to 36 Vdc @25 mA
Relay: 60 VA, 1 A maximum
Switch Mode: Selectable, SPST, NO or NC states
Wetted Materials: Polypropylene (PP) or Perfluoroalkoxy (PFA)
Loop Resistance: 600 Ω @ 24 Vdc
Maximum Pressure Rating PP: 150 psi @ 25°C (76°F) derated @ 1.667 psi per °C above 25°C (76°F)
Maximum Temperature Rating: -40 to 90°C (-40 to 194°F)
Enclosure Rating: NEMA 6 (IP68) submersible sensor and cable
Cable Length: 3 m (10') 4 conductor shielded
Max. Cable Length: 305 m (1000')
Dimensions: 7.6 or 11.4 L x 2.7 cm Dia (3.0 or 4.5 x 1.05") ¾ NPT or ¾ G

To Order

Model No.	Description	Material	Length	Thread
LVF-210A-R	Optic sensor	PP	7.6 cm (3")	¾ NPT
LVF-211A-R	Optic sensor	PFA	7.6 cm (3")	¾ NPT
LVF-212A-R	Optic sensor	PP	11.4 cm (4.5")	¾ NPT
LVF-213A-R	Optic sensor	PFA	11.4 cm (4.5")	¾ NPT
LVF-210A-G-R	Optic sensor	PP	7.6 cm (3")	¾ G
LVF-211A-G-R	Optic sensor	PFA	7.6 cm (3")	¾ G
LVF-212A-G-R	Optic sensor	PP	11.4 cm (4.5")	¾ G
LVF-213A-G-R	Optic sensor	PFA	11.4 cm (4.5")	¾ G

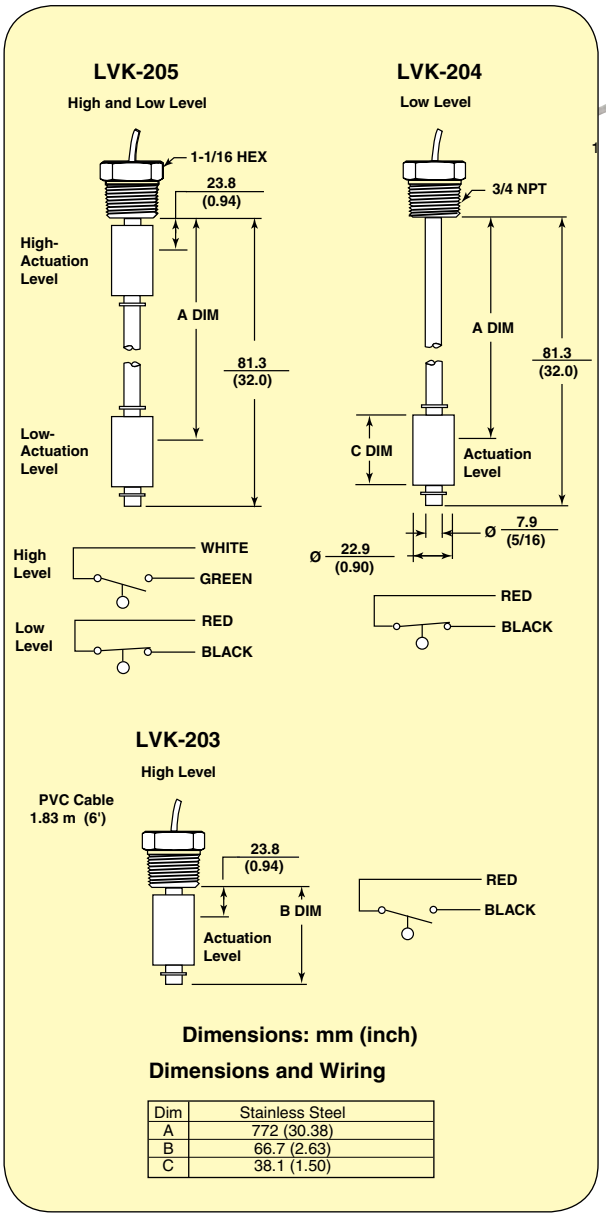
Comes complete with operator's manual.
***Ordering Example: LVF-210A-R,** PP optic sensor, 3 x ¾ NPT.*
***LVF-213A-R**, PFA optic sensor, 4.5 x ¾ NPT*

55 GALLON DRUMS

High-, Low-, or High- and Low-Level Signals

LVK-200 Series

- **Easy to Install**
- **Normally Open or Normally Closed**
- **SPST Hermetically Sealed Switch**
- **All Parts Available in Stainless Steel for Aggressive Media**



Dimensions: mm (inch)

Dimensions and Wiring

Dim	Stainless Steel
A	772 (30.38)
B	66.7 (2.63)
C	38.1 (1.50)

LVK-201 shown smaller than actual size.

Easy to install, the LVK-200 Series level switches provide a signal for high-level alarms to prevent spills, a low-level alarm to warn an operator when it's time to refill, or a high- and low-alarm combination for total control. High- and low-level signals can either provide input to alarms or can be combined with a relay or controller to operate valves or pumps.

SPECIFICATIONS

Stem Material: 304 SS

Float Material:

304 SS: LVK-203, LVK-204 and LVK-205

Operating Temperature:

Stainless Steel: -40 to 149°C (-40 to 300°F)

Pressure Rating: 100 psig

Mounting: ¾ NPT brass or stainless steel

Switch: SPST, 20 VA reed switch

Minimum Media Specific Gravity:

LVK-203, LVK-204 and LVK-205: 0.80

Other Wetted Material: Beryllium copper, Armco® PH 15-7 MO® grip rings (LVK-203, LVK-204 and LVK-205)

To Order

Model No.	Stem/Float	Switch Logic	Function
LVK-203	304 SS	N.O. dry	High-level
LVK-204	304 SS	N.C. dry	Low-level
LVK-205	304 SS	N.O./N.C.	High-level/ low-level

N.O. = normally open, N.C. = normally closed

LVM-11

1 YEAR WARRANTY RoHS

- **Adjustable In-Tank Mounting System**
- **Mounts Up to Four Sensors**
- **Mixer Compatible With Rotational Velocities of Up to 1.5 fps**
- **Optional Side Mount Bracket Conveniently Mounts the Track to Tank Wall**
- **Permits Different Sensing Technologies for Additional Safety**
- **Easy to Adjust with Changing Processes**
- **Integral Controller Options Available**

OMEGA's level track system is an in-tank (unpressurized tanks only) mounting system that enables the user to install and adjust up to four OMEGA® sensors to any depth along the entire length of the track. The track is made entirely of polypropylene and is available in 0.6, 1.2 or 1.8 m (2, 4, 6, 8 or 10') lengths. Lengths of up to 1.8 m (10') can be special ordered.

Select the level track system for mixing applications with radial velocities up to 1.5 fps (feet per second). The track mounts vertically through the top of the tank with a standard 2 NPT tank adaptor. Each track kit includes a 2 NPT fitting assembly, a two, four or six foot track section, and one sensor car. Additional sensor cars can be purchased separately. Sensors are all sold separately.

SPECIFICATIONS

Track Length: Available in 0.6, 1.2 or 1.8 m (2, 4, 6, 8 and 10')
Wetted Material: 20% glass filled Polypropylene (PP)
Mounting Threads: 2 NPT tank adaptor or side mount bracket
Maximum Temperature Rating: 90°C (194°F)
Sensor Car Adjustment: Along the entire length of track
Mounting Orientation: Vertical
Radial Velocities: Up to 1.5 fps
Dimensions: 2.5 cm (1") square by lengths of 0.6, 1.2 or 1.8 m (2, 4, 6, 8 and 10')
Side Mount Bracket: 15 x 8.1 x 5 cm (6 x 3.2 x 2")
Side Mount Bracket Mounting Method: Bolted or welded to side wall of tank

Level track mounting systems may be used with the following sensors: LVU-150, LVC-100 and LVV-110. Sold separately and available online.

LVCN-12, optional.

2 NPT

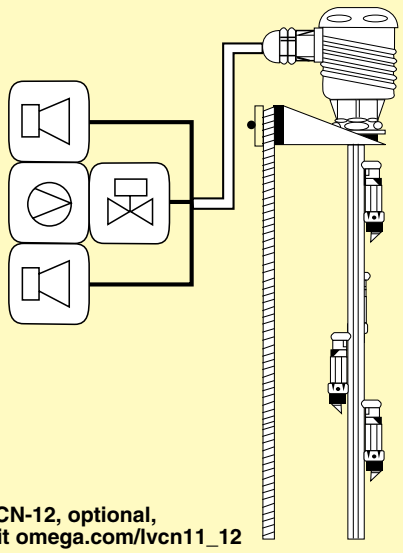
LVM-11 shown smaller than actual size.

Available in 2, 4, 6, 8, or 10' Lengths

Use the LVM level track as part of an overall level control system.

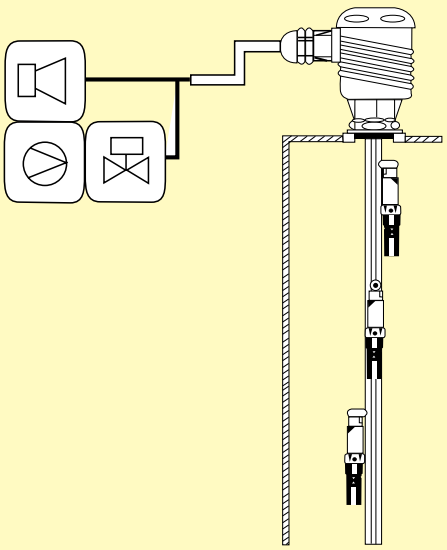
K

Automatic Fill or Empty with

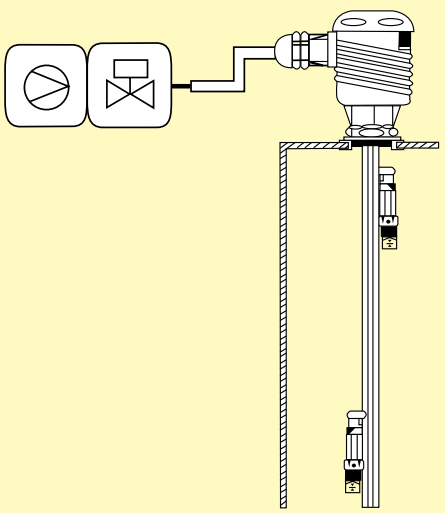


LVCN-12, optional, visit omega.com/lvcn11_12

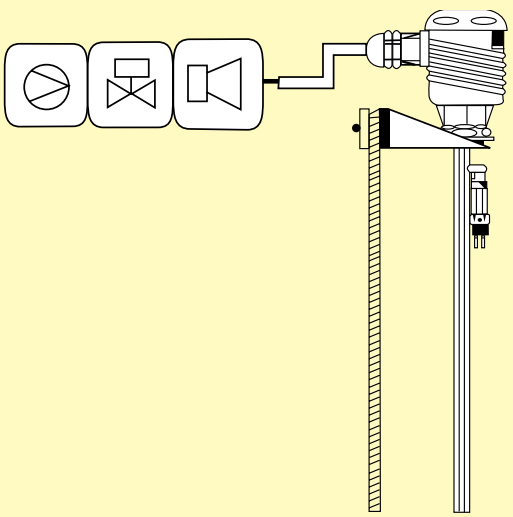
Automatic Fill or Empty



Automatic Fill or Empty



High or Low Level Switch



To Order

Model No.	Description	Size
LVM-11	Level track kit	2' x 1" square
LVM-12	Level track kit	4' x 1" square
LVM-13	Level track kit	6' x 1" square
LVM-14	Level track kit	8' x 1" square
LVM-15	Level track kit	10' x 1" square
LVM-20	Sensor car kit	2 x 1"
LVM-30	Side mount bracket	6 x 3.2 x 2"
LVCN-11	4 sensor electrical housing	2.8 x 4.5 x ¾ NPT
LVCN-12	2 sensor electrical housing	2.8 x 3.5 x ¾ NPT

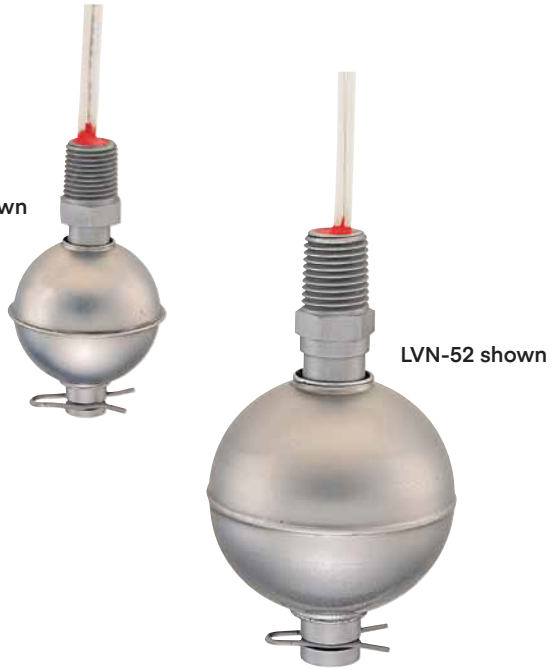
Comes complete with operator's manual.
Track comes with 2 NPT fitting and one sensor car. Sensors sold separately.
***Ordering Examples: LVM-11,** 2' track kit, plus **LVM-20,** sensor car kit, plus **LVM-30,** side mount bracket.*
***LVM-12,** 4' track kit, two **LVM-20** sensor car kits, **LVCN-12,** electrical housing.*

a DwyerOmega brand

High-Temperature NEMA 6 Liquid Level Switches
All Stainless Steel Construction

1 YEAR WARRANTY

- NEMA 6 Rated
- High-Pressure Models up to 1000 psi
- User Selectable, Normally Open, or Normally Closed
- Mounts Vertically at Top or Bottom of Tank
- Well Suited for Rough or Corrosive Applications



These liquid-level switches are sealed with potting compound. The only path for liquid to the electrical switch would be through the wires.

If the wires are terminated in an appropriate manner (e.g., NEMA 6 connectors), the level switch will meet or exceed a NEMA 6 rating, making it suitable for years of worryfree operation in moisture-laden environments. A sealed SPST switch provides consistent accuracy and high repeatability while minimizing the effects of shock, vacuum, or vibration. The switch is extremely versatile since it is user selectable as normally open or normally closed by simply reversing the float or the mounting of the switch. The standard NPT male fittings allow for quick installation in either the top or bottom of the tank or vessel.

Specifications

Stem Material: 316 SS

Float Material: 316 SS

Operating Temperature: -40 to 149°C (-40 to 300°F)

Maximum Pressure Rating: From 225 to 1000 psi

Mounting:

LVN-40 and LVN-50: ⅛ NPT

LVN-52: ¼ NPT

Switch: SPST

Switch Actuation: Approx. half the distance from the end of stem to mounting or halfway point of float travel in liquid of 1.0 specific gravity.

Lead Wires: 20 AWG, 24" PVC

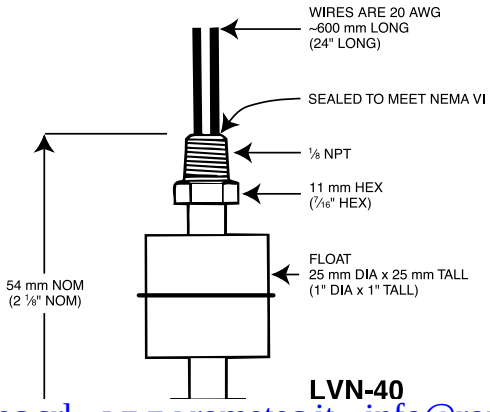
Specific Gravity of Float:

LVN-40: 0.72

LVN-50: 0.70

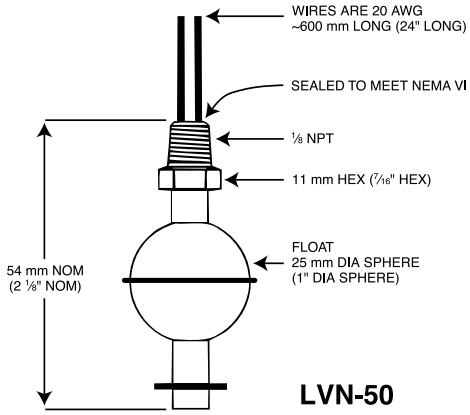
LVN-52: 0.64

Dimensions: mm (inch)

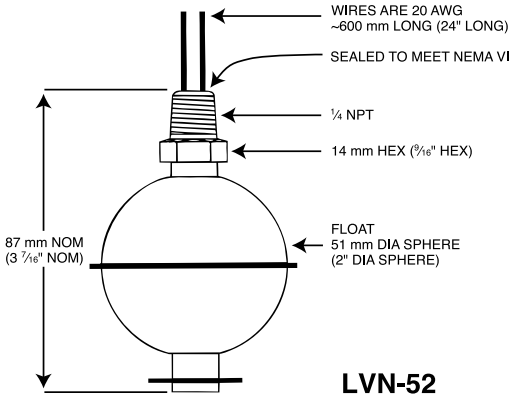


LVN-40

Dimensions: mm (inch)



LVN-50



LVN-52

To Order

Model Number	Temperature Rating °C (°F)	Pressure Rating	NPT Size	Switch Rating
LVN-40	-40 to 149 °C (-40 to 300 °F)	900 psi	⅛	50 VA
LVN-50	-40 to 149 °C (-40 to 300 °F)	1000 psi	⅛	50 VA
LVN-52	-40 to 149 °C (-40 to 300 °F)	975 psi	¼	50 VA

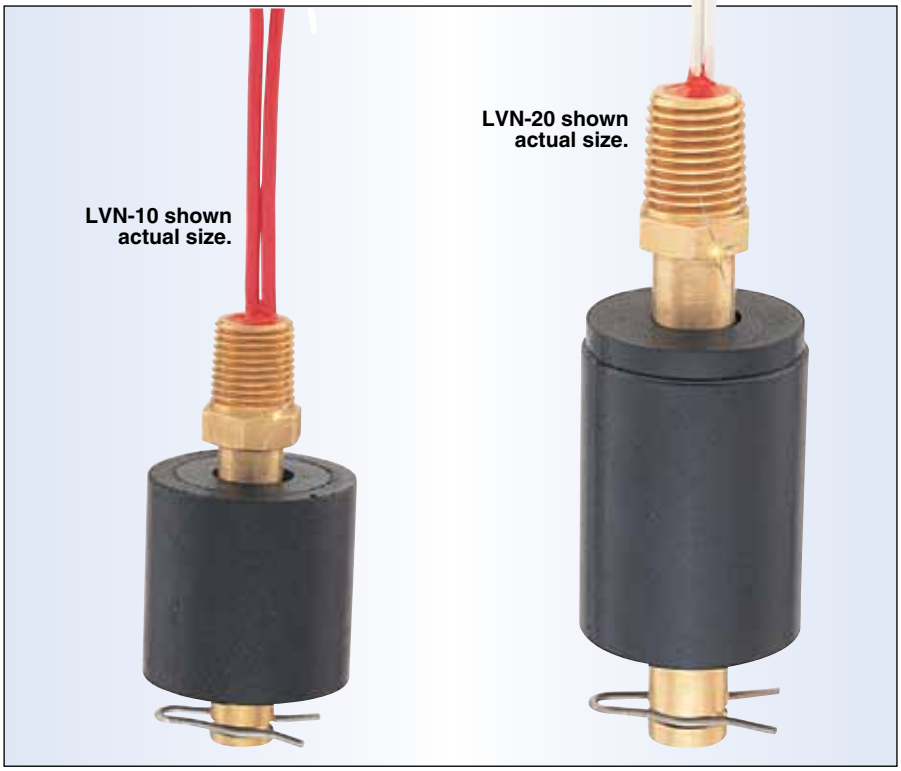
Comes complete with operator's manual.
Ordering Examples: LVN-52, *high-temperature liquid level switch.*
LVN-40, *high-temperature liquid-level switch.*

LIQUID LEVEL SWITCHES

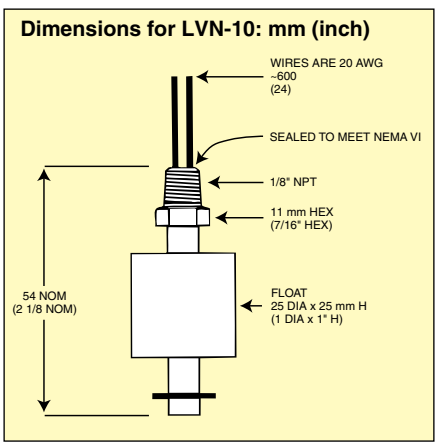
LVN-10

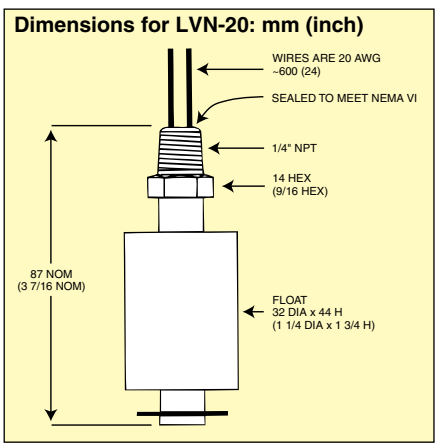
3 YEAR WARRANTY CE

- **Low Cost Compact Design**
- **NEMA 6 (IP68) Rated**
- **User Selectable, Normally Open or Normally Closed**
- **Mounts Vertically at Top or Bottom of Tank**
- **Reed Switch Design for High Repeatability**



These liquid level switches are sealed with potting compound. The only path for liquid to the electrical switch would be through the wires. If the wires are terminated in an appropriate manner [e.g. NEMA 6 (IP68) connectors], the level switch will meet or exceed a NEMA 6 (IP68) rating, making them suitable for submersion with years of worry free operation in moisture-laden environments. A sealed SPST switch provides consistent accuracy and high repeatability with the effects of shock, vacuum or vibration minimized. The switch is extremely versatile since it is user selectable as a normally open or normally closed by simply reversing the float or the mounting of the switch. The standard NPT male fittings allow for quick installation in either the top or bottom of the tank or vessel.





SPECIFICATIONS

Stem Material: Brass
Float Material: Buna-N
Wetted Material: Brass, Buna-N, 316SS
Operating Temperature:
-40 to 82°C (-40 to 180°F)
110°C (230°F) in Oil
Maximum Pressure Rating:
LVN-10: 160 psi
LVN-20: 225 psi
Mounting:
LVN-10: ⅛ NPT
LVN-20: ¼ NPT
Switch: SPST

Switch Actuation: Approximately ½ the distance from the end of stem to mounting or halfway point of float travel
Lead Wires: 20 AWG. 24" PVC

Specific Gravity of Float:
LVN-10: 0.56
LVN-20: 0.70

To Order

Model No.	Stem Material	NPT Size	Switch Rating
LVN-10	Brass	⅛	50 VA
LVN-20	Brass	¼	50 VA

Comes complete with operator's manual.

***Ordering Examples: LVN-20,** low cost liquid level switch. **LVN-10,** low cost liquid level switch.*

LIQUID LEVEL SWITCHES

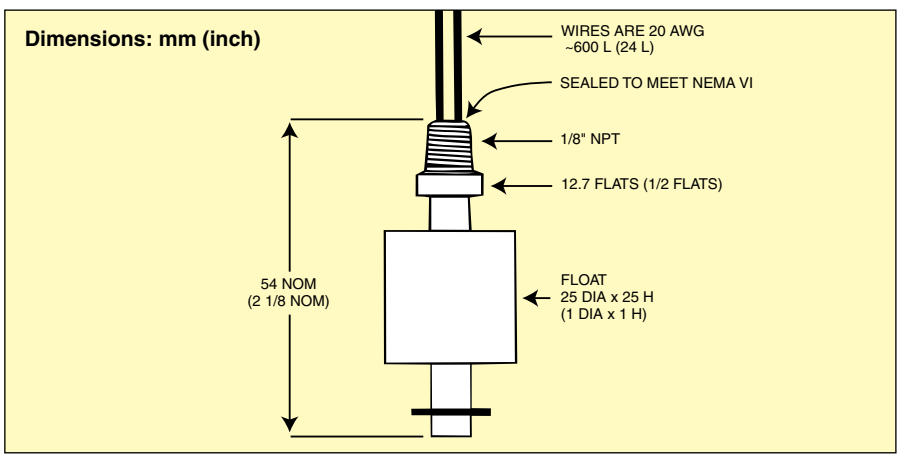
Broad Chemical Compatibility

LVN-60

3 YEAR WARRANTY

- **NEMA 6 (IP68) Rated**
- **User Selectable, Normally Open or Normally Closed**
- **Mounts Vertically at Top or Bottom of Tank**

These liquid level switches are sealed with potting compound. The only path for liquid to the electrical switch would be through the wires. If the wires are terminated in an appropriate manner [eg. NEMA 6 (IP68) connectors], the level switch will meet or exceed a NEMA 6 (IP68) rating, making them suitable for submersion with years of worry free operation in moisture-laden environments. A sealed SPST switch provides consistent accuracy and high repeatability with the effects of shock, vacuum or vibration minimized. The switch is extremely versatile since it is user selectable as a normally open or normally closed by simply reversing the float or the mounting of the switch. The standard NPT male fittings allow for quick installation in either the top or bottom of the tank or vessel.



SPECIFICATIONS

Operating Temperature: -40 to 82°C (-40 to 180°F)
Maximum Pressure Rating: 100 psi
Mounting: ⅛" NPT
Switch: SPST
Switch Actuation: Approximately half the distance from the end of stem to mounting or halfway point of float travel in liquid of 1.0 specific gravity
Lead Wires: 20 awg. 24" PVC

To Order

Model No.	Switch Rating	Stem/Float	Maximum Temp.°C/F	Maximum Pres.	Float Spec. Gravity
LVN-60	50 VA	CPVC	82/180	100 psi	0.72
LVN-61	50 VA	PVDF	82/180	100 psi	0.92
LVN-70	50 VA	Polypropylene	82/180	100 psi	0.52

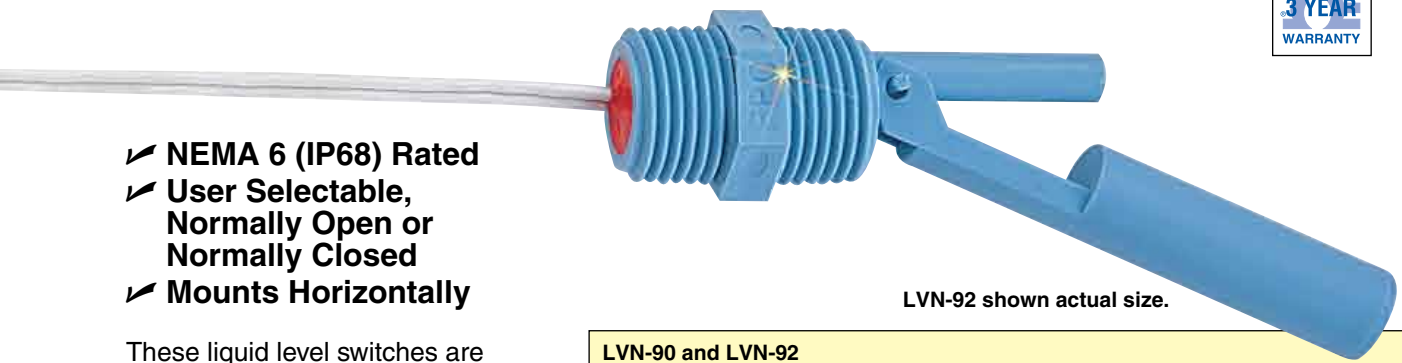
Comes complete with operator's manual.
Ordering Examples: LVN-61, *PVDF level switch.*
LVN-70, *polypropylene level switch.*

NEMA 6 (IP68) SIDE MOUNTED LIQUID LEVEL SWITCHES

For High, Low, or Intermediate Level Sensing

LVN-90 Series

3 YEAR WARRANTY



LVN-92 shown actual size.

- NEMA 6 (IP68) Rated
- User Selectable, Normally Open or Normally Closed
- Mounts Horizontally

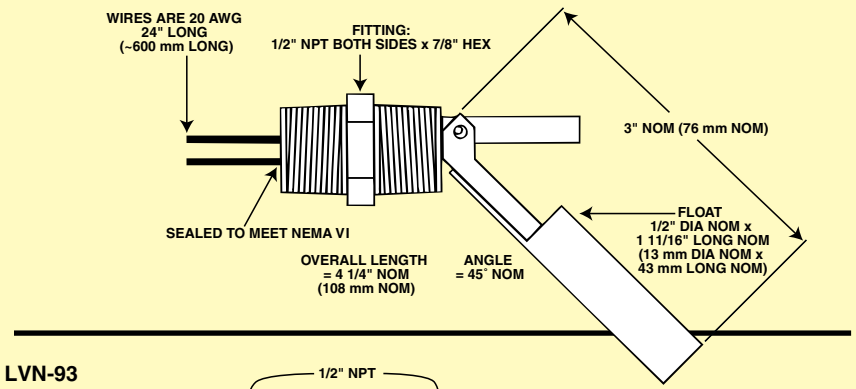
These liquid level switches are sealed with potting compound. The only path for liquid to the electrical switch would be through the wires. If the wires are terminated in an appropriate manner [eg. NEMA 6 (IP68) connectors], the level switch will meet or exceed a NEMA 6 (IP68) rating, making them suitable for submersion with years of worry free operation in moisture-laden environments. A sealed SPST switch provides consistent accuracy and high repeatability with the effects of shock, vacuum or vibration minimized.

The switch is extremely versatile since it is user selectable as a normally open or normally closed by simply reversing the float or the mounting of the switch. The standard NPT male fittings allow for quick installation in either the top or bottom of the tank or vessel.

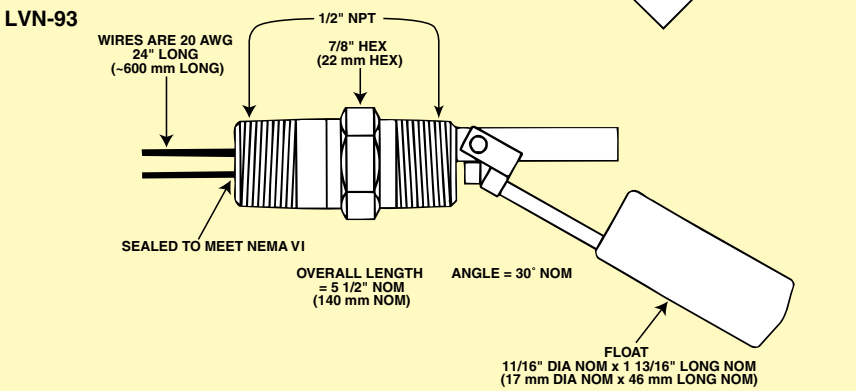
LVN-90 shown smaller than actual size.

LVN-91 shown smaller than actual size.

LVN-90 and LVN-92



LVN-93



SPECIFICATIONS

Operating Temperature:
LVN-90 thru LVN-92: -40 to 82°C (-40 to 180°F)
LVN-93: -40 to 149°C (-40 to 300°F)
Maximum Pressure Rating:
100 to 500 psi

Mounting: ½ NPT
Switch: SPST
Switch Actuation:
Approximately ½ the float travel in liquid of 1.0 specific gravity
Lead Wires: 20 awg. 24" PVC

To Order

Model No.	Switch Rating	Stem/Float	Maximum Temp.°C (F)	Maximum Pres.	Float Spec. Gravity
LVN-90	50 VA	CPVC	82 (180)	100 psi	0.71
LVN-91	50 VA	PVDF	82 (180)	100 psi	0.88
LVN-92	50 VA	Polypropylene	82 (180)	100 psi	0.49
LVN-93	50 VA	316 SS	149 (300)	500 psi	0.85

Comes complete with operator's manual.
***Ordering Examples: LVN-93,** 316 stainless steel level switch.*
***LVN-90,** CPVC level switch.*

RF CAPACITANCE SENSORS

LVP-51-R

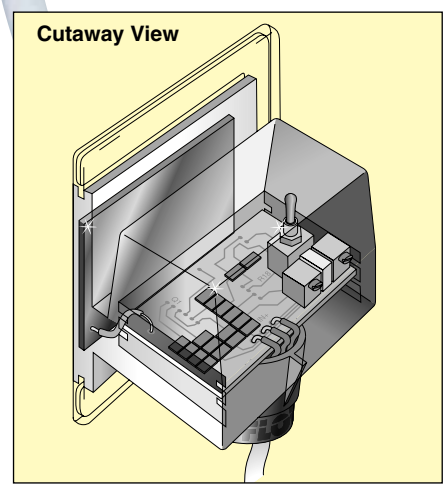
1 YEAR WARRANTY

- **Detects Liquid Through Plastic or Fiberglass Tank Walls Up to 25.4 mm (1") Thickness**
- **SPST Relay Output Standard**
- **Sensor Conveniently Slides In and Out of Mounting Bracket in PE or PP**
- **Ideal For Many Ultrapure and Sanitary Applications**
- **Easy Two Step Calibration**
- **Selectable Normally Open or Normally Closed**

LVP-51-R shown smaller than actual size.

OMEGA® non-intrusive RF capacitance sensors deliver accurate and reliable liquid level detection with an SPST mechanical relay output. A versatile weld-on fitting enables the sensor to be mounted directly to the wall of any standard polyethylene, fiberglass or polypropylene tank. Simply align the fitting with the tank and press it into place. An engineered adhesive holds the fitting during welding and provides a seal between the sensor and the tank wall. Omega's two-step calibration feature ensures the highest level of dielectric sensitivity.

Relay:
GP:120 Vac/Vdc @ 1 A
CE: 60 Vac/Vdc @ 1 A
Switch Mode:
Selectable, NO or NC states
Switch Display: Single LED provides calibration and liquid status feedback
Loop Resistance: 600 Ω @ 24 Vdc
Maximum Temperature Rating:
-40 to 80°C (-40 to 176°F)
Enclosure Material: Polysulfone
Enclosure Rating:
NEMA 4 (IP65), splash proof and chemical resistant design
Std. Cable Length: 3 m (10')
Maximum Cable Length: 305 m (1000')
Dimensions: 6.4 x 4.3 x 3.8 cm (2.5 x 1.7 x 1.5")



SPECIFICATIONS

Accuracy: ±1 mm (0.04") in water
Repeatability: ±0.5 mm (0.02") in water
Dielectric Range: 10 to 80 dielectric units @ 1 MHz
Tank Compatibility: Plastic and fiberglass (non-metallic)
Tank Wall Thickness:
Up to 25.4 mm (1") maximum
Voltage Input: 12 to 36 Vdc
Consumption: 25 mA maximum

To Order

All sensors have FET switch and 4 or 20 mA outputs

Model No.	Description	Matrial	Size cm (inch)
LVP-51-R	Non-intrusive capacitance sensor	PP	6.4 x 4.3 x 3.8 (2.5 x 1.7 x 1.5)
LVP-91	PE sensor fitting	PE	6.4 x 6.4 (2.5 x 2.5)
LVP-92	PP sensor fitting	PP	6.4 x 6.4 (2.5 x 2.5)

Comes complete with operator's manual and 3 m (10') cable.
LVP-51-R has an SPST mechanical relay output standard.
*Two extended cable lengths available. For 7.62 m (25') add suffix "**-25**" to model number, for additional cost. For 15.24 m (50') add suffix "**-50**" to model number, for additional cost.*
***Ordering Example: LVP-51-R** sensor and **LVP-92**, PP sensor fitting.*

ECONOMICAL LIQUID-LEVEL TRANSMITTERS

SUITABLE FOR LEVELS TO 6 FEET

LVR20/30 Series

1 YEAR WARRANTY

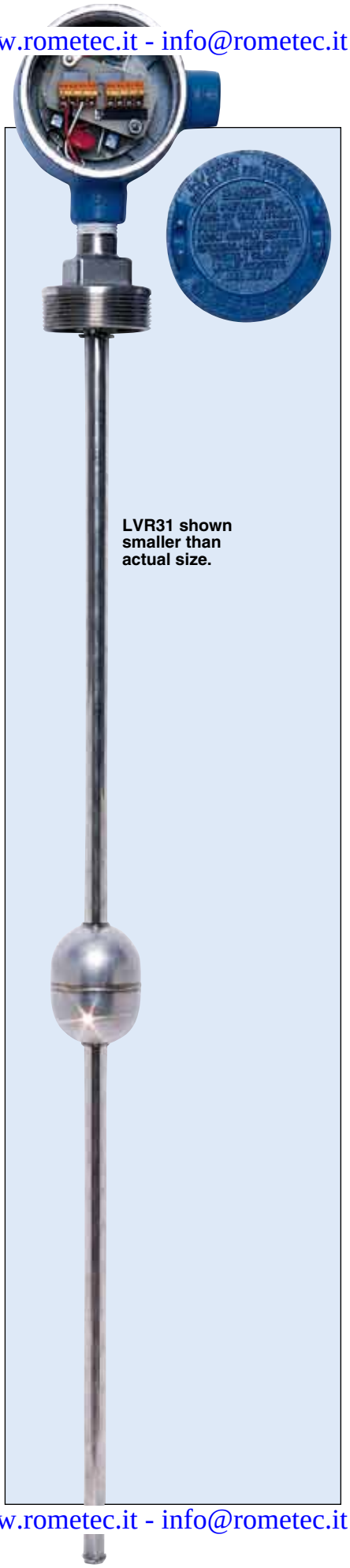
- **Rugged Stainless Steel Construction**
- **4 to 20 mA or Resistance Output**
- **Immune to Density and Dielectric Changes**
- **¼" Resolution**

The OMEGA® LVR20 and LVR30 Series continuous liquid-level sensors operate on a basic voltage divider network principle. As the float rises, a magnet in the float closes a series of reed switches in sequence, which varies the tapped-off portion of the voltage divider resistor network. The LVR20 has the basic voltage divider output—the regulated DC voltage input equals the maximum voltage output. The LVR20 has a nominal 1200 resistance; thus, with a 10 Vdc supply, 8.3 mA of current is required.

The OMEGA® DPF52 or DP24-E panel meters can be used to power and display the resistance from the LVR20; when relays are required, the DP25E-A meter can be used. For maximum accuracy, the readout device for the LVR20 should be zero and span adjusted after wiring is completed to compensate for any effects caused by the resistance of the lead-wires. The LVR20 can also be made intrinsically safe when used with OMEGA's intrinsic safety barriers and when properly powered. The LVR30 Series features a signal conditioner that provides a 4 to 20 mA output when powered by 10 to 30 Vdc. The LVR30 transmitters cannot be made intrinsically safe.

All LVR30 units come with a J-box with screw terminal connections. LVR20 units do not come with a J-box but have 24 inches of bare wire coming out of the top of the unit with a ½ MNPT conduit connection. All LVR20 and LVR30 Series units can be wired for increasing output with either increasing or decreasing height of liquid; standard output is increasing output with increasing height. For other lengths, adaptor systems are available. These consist of 2 parts: the LVR-C coupling (2 x 2 FNPT) and an LVR-A pipe nipple (2 x 2 MNPT) of various lengths to change the insertion depth of the LVR20 or LVR30 sensor. When using the adaptors, a zero offset is introduced into the output signal, which must be compensated for in the readout device (for example, the mA signal, will not go down to 4 mA, nor will the voltage output go down to zero).

Retaining clip pliers are required to remove the float when using the adaptor system.



LVR31 shown smaller than actual size.

SPECIFICATIONS

Wetted Parts: 316 SS stem and mounting, 316 SS float, 18-8 SS float stop

Liquid Temperature:
To 82.2°C (180°F) in water

Minimum Liquid Specific Gravity: 0.75

Operating Temperature:
-40 to 110°C (-40 to 230°F)

LVR30 Temperature Coefficient:
±0.00388% FS/°F

Max Operating Pressure: 300 psig

Operating Voltage:
- **LVR30:** 10 to 40 Vdc
- **LVR20:** 10 to 30 Vdc

LVR30 Loop Impedance: (Volts in - 10) x 46.66 = Ω with 24 Vdc power, maximum loop impedance = 653 Ω

Connections: LVR30 is 2-wire; LVR20 is 3-wire

Accuracy:
- **LVR30:** 0.4% of FS or ±½", whichever is greater
- **LVR20:** ±½"

Weights:
- **LVR30:** 5 lb + ¼ lb per foot
- **LVR20:** 1¾ lb + ¼ lb per foot
- **LVR-C:** 1¼ lb

Dimensions for LVR20 and LVR30

A: Float travel = indicating length ⅜" ±¼"

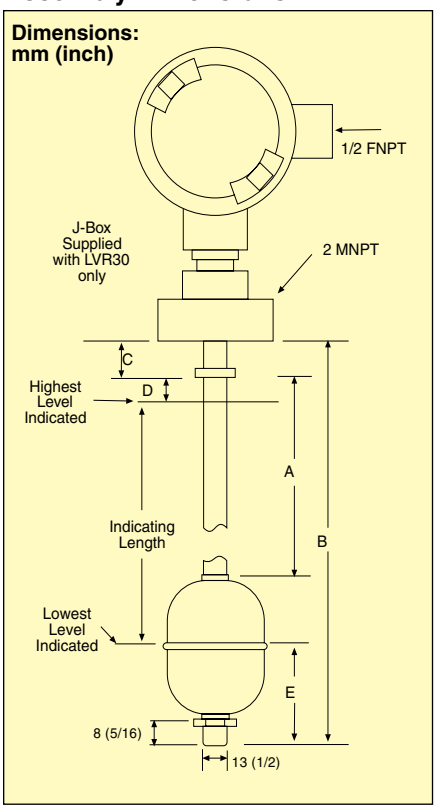
B: Stem length = indicating length 3 9/16" ±1/16"

C: Distance to float stop = 6.4 mm (¼") ±1/16"

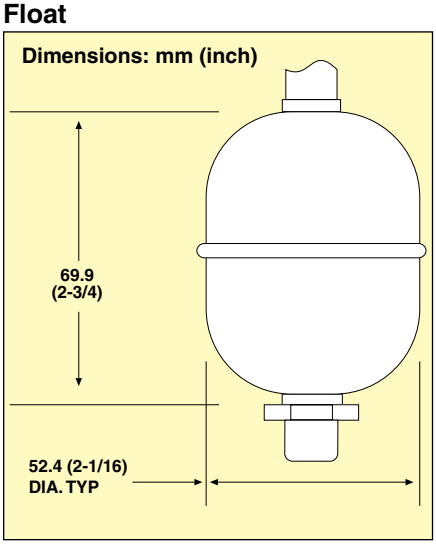
D: 39.7 mm (1 9/16")

E: 44.5 mm (1¾") (assumes 1.0 SG fluid)

Assembly Dimensions



Float



150 lb, 304 SS Coupling, 2 x 2 FNPT

Model No.
LVR-C

Use the LVR20 and LVR30 transmitters with the DPF50 Series indicators.

To Order

Isolated 4 to 20 mA Output	Voltage Divider Voltage in = Voltage out	
Model No.	**Model No.**	**Indicating Length**
LVR31	LVR21	1 ft
LVR32	LVR22	2 ft
LVR33	LVR23	3 ft
LVR34	LVR24	4 ft
LVR35	LVR25	5 ft
LVR36	LVR26	6 ft

Ordering Examples: LVR31, *316 SS level sensor with mounted J-Box and 0.3 m (1') indicating length.*

LVR22, *316 SS level sensor with 0.6 m (2') long indicating length, nominal 0 to 1200 Ω resistance change and a 2 MNPT mounting thread.*

Pipe Nipples, 304 SS, 150 lb fittings, 2 x 2 MNPT

Model No.	Weight (lb)	Indicating Length Change
LVR-A4	1¼	4"
LVR-A5	1½	5"
LVR-A6	1¾	6"
LVR-A7	2	7"
LVR-A9	2½	9"
LVR-A11	3	11"
LVR-A13	3½	13"

LVR-A4 shown smaller than actual size.

LVR-C shown smaller than actual size.

K

LVR500 Series

1 YEAR WARRANTY

- **High Pressure or Temperature Level Measurement Up to 2 m (6.5')**
- **Rugged 316 Stainless Steel Float Guide and Process Mounting Plug**
- **Polypropylene Junction Box Rated NEMA 4X (IP65) with Conduit Port and Terminal Strip**
- **Great for High Pressure Applications Up to 200 psi (13.8 bar)**
- **Use in Applications with Foam or Turbulence**
- **Loop Powered Output Interfaces Directly with PLC/SCADA or Local Display**

LVR500 shown smaller than actual size.

Specific Gravity: 0.55 min
Supply Voltage: 10 to 30 Vdc
Loop Resistance: 600 Ω @ 24 Vdc
Signal Output: 4 to 20 mA, two-wire
Process Temp: -40 to 85°C (-40 to 185°F)
Ambient Temp: -40 to 60°C (-40 to 140°F)
Pressure: 200 psi (13.8 bar)
Enclosure Rating: NEMA 4X (IP65)
Enclosure Material: PP
Conduit Entrance: Single, ½NPT
Process Mount: 2 NPT
Guide-Float Material: 316 SS
Classification: General purpose
Compliance: CE

The LVR500 Series float level transmitter provides continuous level measurement up to 2 m (6.5') with a 4 to 20 mA signal output, and is factory configured to your selected dimension. This stainless steel liquid level sensor is well suited for high temperature or pressure tank level applications with relatively clean liquids such as water, diluted chemicals and light weight oils. Typical application examples include boilers and process vessels.

To Order

Model No.	Description	Range* cm (in)
LVR516	Float level transmitter, 4 to 20 mA output	41 (16)
LVR524	Float level transmitter, 4 to 20 mA output	61 (24)
LVR532	Float level transmitter, 4 to 20 mA output	81 (32)
LVR536	Float level transmitter, 4 to 20 mA output	91 (36)
LVR542	Float level transmitter, 4 to 20 mA output	107 (42)
LVR548	Float level transmitter, 4 to 20 mA output	122 (48)

Comes complete with operator's manual.
** For lengths above 48" contact OMEGA for pricing.*

SPECIFICATIONS

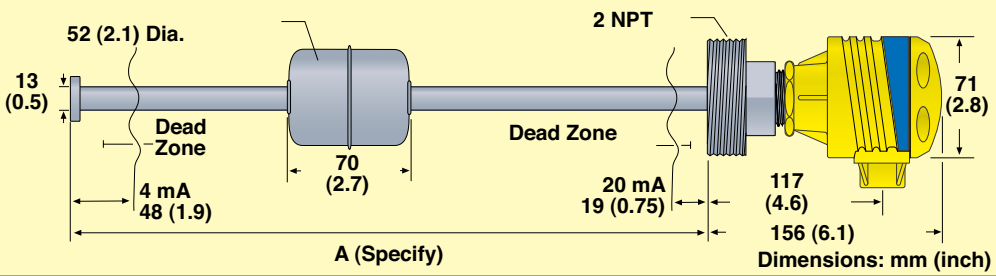
Range: 41 to 1222 cm (16 to 48")
Accuracy: 0.25% span in water
Configuration: None, fixed span
Orientation: ±20° from vertical

Accessories

Model No.	Description
PSU-93	Unregulated 24 Vdc power supply
DPi8	⅛ DIN panel meter with 24 Vdc excitation
TX4-100	30.5 m (100') spool of 4 conductor wire

Ordering Examples: LVR516, *41 cm (16") indicating length level transmitter with PP head.*
LVR524, *61 cm (24") indicating length level transmitter with polypropylene head.*

*"**-A**" dimension at the end of the part number: The level sensor is offered in six standard guide lengths from 41 to 122 cm (16 to 48"). The 20 mA set point is placed at 19 mm (0.75") below the mounting plug, and the 4 mA set point is placed at 48 mm (1.9") above the guide stop. The space above and below these set points are dead zones.*



Rometec srl - www.rometec.it - info@rometec.it - Rometec srl - www.rometec.it - info@rometec.it

Guided Wave Radar Level Transmitter

LVRD10 Series

- **Fail-Safe Diagnostics with Selectable Signal Fail-Safe Output**
- **Recognition, Storage and Rejection of False Echo Signals**
- **NEMA 4 (IP66) Aluminum Enclosure**
- **316L SS Antenna and Mount**
- **Simple Configuration Via Free Software**
- **Guided Wave Radar is Unaffected By Vapor or Condensation**
- **10 cm (4") Dead Band Enables Utilization of the Entire Tank**

All models shown smaller than actual size.

The LVRD10 Series of general purpose guided wave radar level transmitters provide continuous level measurement with a 4 to 20 mA signal output. Offered in three probe (rod, coaxial or cable) configurations up to 3 m (9.8') for the rod and coaxial and 5.5 m (18.0') for the cable design. The sensor is configured using the easy, yet powerful software (free download at OMEGA).

The contact liquid level sensor is intended for low corrosive chemical, waste, oil or water storage applications in above grade metal or reinforced concrete tanks or below grade tanks of any material. Select the sensor for easy application conditions with light agitation, condensation or vapor, and installation in a tank adapter or flange fitting.

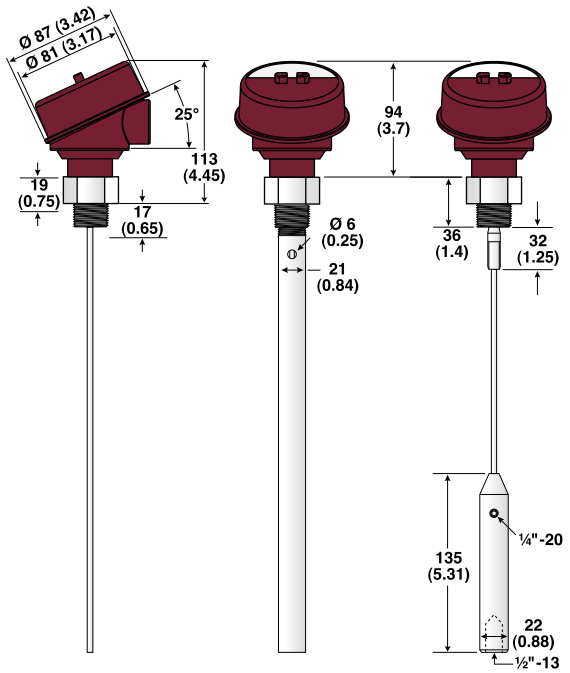
Specifications

Housing

Range: Rod/coaxial; 3 m (9.8')
Cable: 5.5 m (18')
Dead Band: 10 cm (4")
Accuracy: ±3 mm (0.118")
Repeatability: < 2 mm (0.08")
Resolution: < 1 mm (0.04")
Dielectric Constant: > 2
Configuration: PC Windows® USB 2.0
Supply Voltage: 10 to 30 Vdc
Signal Output: 4 to 20 mA, 3-wire, 22 mA maximum
Consumption: < 50 mA at 24 Vdc
Signal Fail Safe: 4 to 20 mA, 21 mA or hold last value
Process Temperature: -40 to 150°C (-40 to 302°F)
Pressure: -1 to 17 bar (-14.5 to 250 psi)
Enclosure: Aluminum with single conduit
Enclosure Rating: NEMA 4 (IP66)
Conduit Entrance: ½ NPT
Antenna Material: 316L SS
Feed Through Material: 316L SS and peek
Process Mount: ¾ NPT or ¾ G
Classification: General purpose
Compliance: CE, RoHS

Probe Mounting	Rod	Cable	Coaxial
Tall and Narrow Risers	•	•	+
Difficult Riser Geometries	•	•	+
Close to Internal Objects/Obstructions or Tank Wall	•	•	+
Probe Might Move or Touch Internal Objects/Obstructions or Tank Wall	•	•	+
Liquid Spray May Touch Probe Above the Liquid Surface	•	•	+
Non-Stationary Interference Targets, e.g. Agitator Blades	•	•	+
Measurement Readings at the Very Top or Bottom of the Tank	•	•	+
Non-Metallic Tanks	•	•	+
Bypass Chambers and Stilling Wells	+	-	•
Limited Headroom for Installation	•	+	•
Tall Tanks	•	+	•
Side Mount Bracket	•	•	+

Media Characteristics	Rod	Cable	Coaxial
Measuring Low Reflectivity Liquids (i.e. Low Dielectric Constant)	•	•	+
Viscous, Crystallizing, Adhesive, Coating, or Sticky Liquids	+	+	-
Fibrous Liquids, Sludge, Slurry, Pulp	+	+	-
Liquids Containing Solid Particles	+	+	-
Cleanability of Probe is Important	+	+	-



+	= Recommended
•	= Possible, maybe with configuration and/ or mounting adjustments
-	= Not recommended

Dimensions mm (inch)
Ø = diameter

To Order

Model No.	Description	Probe Style	Mounting	Range	Weight kg (lb)
LVRD11	Guided wave radar level transmitter	Single rod	¾ NPT	3 m (9.8')	6.8 (15)
LVRD12	Guided wave radar level transmitter	Coaxial	¾ NPT	3 m (9.8')	9.1 (20)
LVRD13	Guided wave radar level transmitter	Cable/weight	¾ NPT	5.5 m (18')	6.8 (15)
LVRD11G	Guided wave radar level transmitter	Single rod	¾ G	3 m (9.8')	6.8 (15)
LVRD12G	Guided wave radar level transmitter	Coaxial	¾ G	3 m (9.8')	9.1 (20)
LVRD13G	Guided wave radar level transmitter	Cable/weight	¾ G	5.5 m (18')	6.8 (15)
LVRD11-3FT	Guided wave radar level transmitter	Single rod	¾ NPT	0.9 m (36")	2.7 (6)
LVRD11-6FT	Guided wave radar level transmitter	Single rod	¾ NPT	1.8 m (72")	2.7 (6)
LVRD12-3FT	Guided wave radar level transmitter	Coaxial	¾ NPT	0.9 m (36")	3.6 (8)
LVRD12-6FT	Guided wave radar level transmitter	Coaxial	¾ NPT	1.8 m (72")	5.4 (12)

Comes complete with free software download and operator's manual.

LVRD501 Series

1 YEAR WARRANTY

- **Non-Contact Measurement**
- **Continuous Level Measurement**
- **Pulse Radar Measurement Range: 0.254 to 15 m (10" to 50')**
- **Simple Pushbutton Calibration**
- **Communications Standard**

LVRD501-RS232 shown smaller than actual size.

The LVRD500 Series a logical extension to the ultrasonic sensor series, is designed for applications requiring non-contact liquid level measurement, in which ultrasonic level measurement is not acceptable.

The LVRD500 Series radar technology can be adjusted for variables such as materials to be measured, vessel configuration, and system interface. These sensors are ideal when vapor, dust, or a foaming surface prevents ultrasonic-wave measurements.

LVRD500 Series radar sensors can detect the level under a layer of light dust or airy foam, but if the dust particle size increases, or if the foam or dust gets thick, they will no longer detect the liquid level. Instead, the level of the dust or foam will be measured. Internal piping, deposits on the antenna, multiple reflections, or reflections from the wall can interfere with the proper operation of the radar sensor. Other sources of interference are rat-holing and bridging of solids, as well as angled process material surfaces that can reflect the radar beam away from the receiver.

The sensors use improved micro-wave-pulse technology to track any target material from the tip of the antenna to the bottom of the tank. Their power, pulse widths, and sensitivity depend on the distance of the target from the antenna and the dielectric constant of the reflecting material.

LVRD500 sensors feature “echo marker” signal process-ing, making them among the most technologically advanced pulse radar systems on the market. This technology provides reliable, continuous pulse shapes unaffected by environmental factors such as temperature, vacuums, methane, steam, pressure, carbon dioxide, vapors, and condensation.

The antenna comes in polypropylene or an optional high resistance PTFE that can help protect against material buildup. Simple mounting and push-button calibration make for easy installation. The sensor can be threaded directly into a 2 NPT metal or plastic flange. The tank must have a metal bottom to stop the microwave signal.

smaller than actual size.

CNi833 shown smaller than actual size.

SPECIFICATIONS

Accuracy: ±0.25% of maximum range (in air)
Power Options:
AC: 115 Vac, 60 Hz or 230 Vac, 50 Hz (±20%), 1.7 VA (4 wire)
DC: 12 to 30 Vdc @ 0.07 A maximum, 24 Vdc (3 wire)
R load = (Vs–6)/24 mA
Output: 4 to 20 mA, 6.1 µA resolution; 750 Ω (isolated on 4-wire models only); optional RS232 communications port
Frequency: 5.8 GHz
Loss of Echo Hold: 30 seconds, 22 mA output
Transmitter Power: 50 µW average
Calibration: Pushbutton or optional programmable
Diagnostics (Echo Profile): Via optional programmable port
Antenna: Dielectric rod
Operating Temperature Range: -40 to 60°C (-40 to 140°F)
Installation Category: Class II
Approvals: FCC Part 15—low-power communication device
Conduit Entry: ½ NPT standard
Mounting: 2 NPT, or optional sanitary 2" Tri-Grip™ (Tri-Clamp® compatible) (-S)
Housing: Aluminum or optional 316 SS
Ingress Protection: NEMA 4 (IP65)
Communications Port: RS232 or RS485
Options: -HT antenna (up to 204°C or 399°F), 316 SS housing (**note:** -HT available with PTFE units only)
Dimensions:
Housing: 102 Dia. x 216 mm L (4 x 8.5")
Antenna: Max Dia. 38 x 259 mm L (4 x 8.5")

To Order

Model No.	Resolution mm (inch)	Range m (ft)	Power/ Wiring
2 NPT Mounting			
LVRD501-RS232	5.6 (0.22)	15.24 (50)	DC: 3 wire
LVRD501-RS485	5.6 (0.22)	15.24 (50)	DC: 3 wire
LVRD502-RS232	5.6 (0.22)	15.24 (50)	AC: 4 wire
LVRD502-RS485	5.6 (0.22)	15.24 (50)	AC: 4 wire
LVRD503-RS232	11.2 (0.44)	30.48 (100)	DC: 3 wire
LVRD503-RS485	11.2 (0.44)	30.48 (100)	DC: 3 wire
LVRD504-RS232	11.2 (0.44)	30.48 (100)	AC: 4 wire
LVRD504-RS485	11.2 (0.44)	30.48 (100)	AC: 4 wire

Accessories

Model No.	Description
DPi8	⅛ DIN process meter
CNi833	⅛ DIN controller with relays

Comes complete with operator's manual. Windows software included with RS232 and RS485 units.
*For high temperature PTFE, add suffix **"-HT"** to model number, for additional cost.*
*For PTFE antenna, add suffix **"-PTFE"** to model number, for additional cost.*
*For 316 SS housing, add suffix **"-316SS"** to model number, for additional cost.*
*For 2" Tri-Grip sanitary mount and PTFE antenna add suffix **"-S"** to model number, for additional cost (only available on LVRD 501 series).*
***Ordering Examples: LVRD504-RS232,** 30.48 m (100') range, AC power with RS232.*
***LVRD501-RS232,** 15.24 m (50') range, DC power with RS232.*

ULTRASONIC SOLID STATE LIQUID LEVEL SWITCH

LVSW-701

1 YEAR WARRANTY

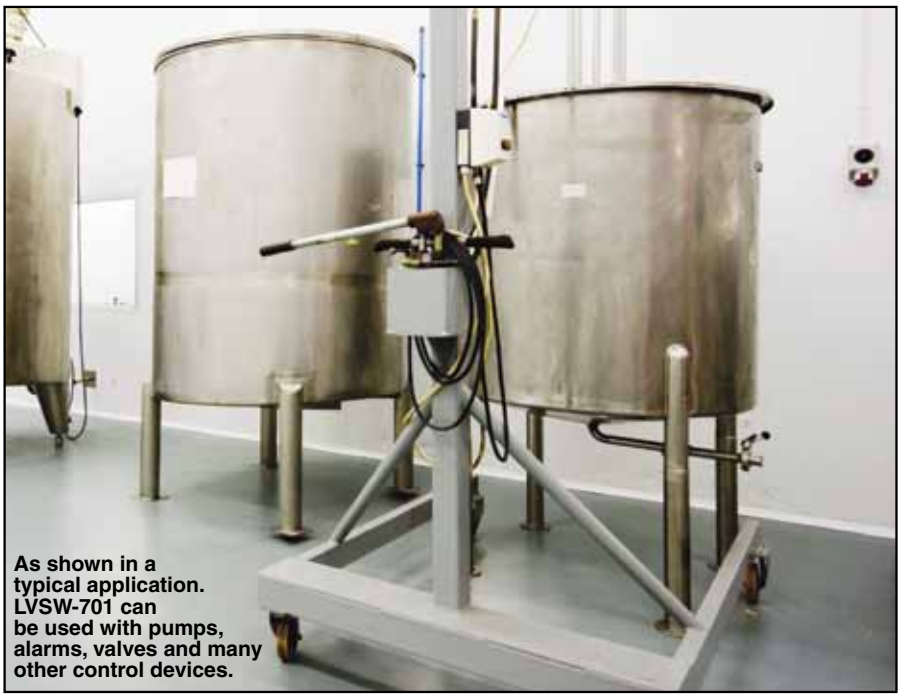
- **300:1 Wet-to-Dry Ratio with 316 SS Sensor**
- **Epoxy-Sealed Integral Electronics with Sensor**
- **Low-Cost Replacement to Mechanical Float**
- **Mounts in Any Direction**

The LVSW-701 solid state liquid level switch is a direct replacement for mechanical float-type liquid level devices. The switch employs proven ultrasonic technology and solid state integral electronics, and provides reliable operation in virtually any liquid, regardless of viscosity. This eliminates problems of stickiness and failure rate due to finite mechanical life inherent in the mechanical float design. The combination of fully epoxy-sealed electronics and ultrasonic sensing technology will provide years of maintenance free service.

SPECIFICATIONS

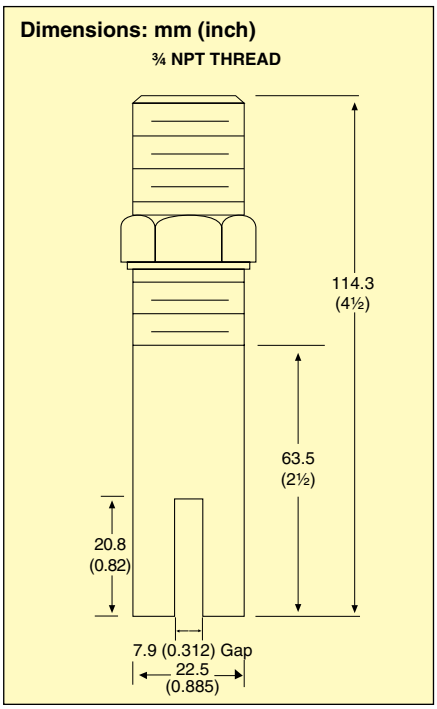
Repeatability: 2 mm (0.08") or better
Delay: 0.5 sec
Input Power: 6 to 24 Vdc
Leakage Current: Less than 50 uA
Outputs:
Relay Output: 1 A SPDT relay
Protection: Transient, reverse polarity
Sensor: 316 LSS
Temperature: -29 to 71°C (-20 to 160°F)
Pressure:
316 SS Models: Up to 1000 psig (6895 kPa)
Mounting: ¾ NPT standard

LVSW-701 shown actual size.



As shown in a typical application. LVSW-701 can be used with pumps, alarms, valves and many other control devices.

Dimensions: mm (inch)



To Order	
Model No.	**Description**
LVSW-701	Level switch, 316 LSS, 1 A SPDT relay

Comes complete with operator's manual.
***Ordering Example: LVSW-701,** 316 LSS, ¾ NPT, 1 A SPDT relay.*

COMPACT ULTRASONIC SOLID STATE LIQUID LEVEL SWITCH

LVSW-710/LVSW-720

1 YEAR WARRANTY

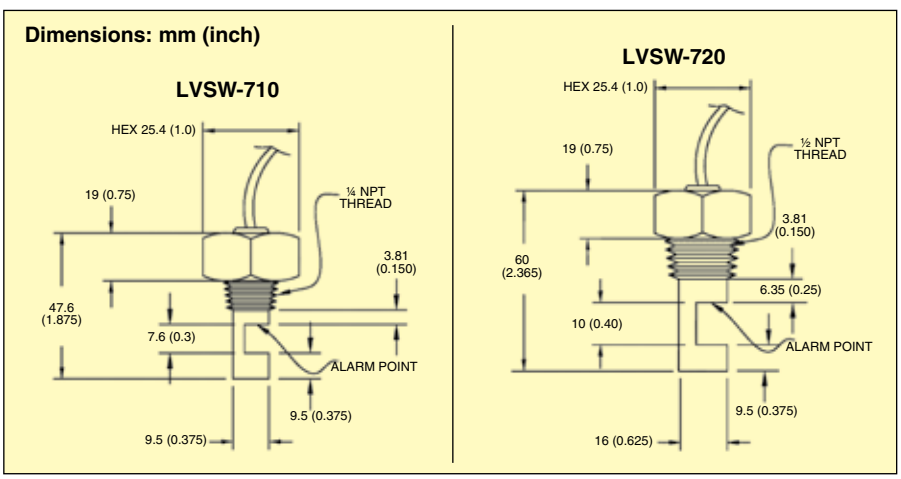
LVSW-710, shown larger than actual size.

- **Easy to Install**
- **No Moving Parts**
- **Epoxy-Sealed Integral Electronics with Sensor**
- **Low-Cost Replacement to Mechanical Float**

The LVSW-710/720 compact solid state liquid level switch is a great replacement for mechanical float-type liquid level devices. The switch employs proven ultrasonic technology and solid state integral electronics in a small package.

The LVSW-710/720 provides reliable operation in virtually any liquid, regardless of viscosity. This eliminates problems of stickiness and failure rate due to finite mechanical life inherent in the mechanical float design. The combination of fully epoxy-sealed electronics and ultrasonic sensing technology will provide years of maintenance-free service.

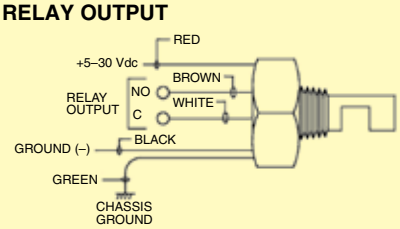
Dimensions: mm (inch)



SPECIFICATIONS

Repeatability: 2 mm or better
Delay: 0.5 sec
Input Power: 5 to 30 Vdc
Leakage Current: Less than 50 uA
Wire Length: 300 mm (12")
Protection: Transient, reverse polarity
Sensor: 316 LSS
Temperature: -29 to 80°C (-20 to 176°F)
Pressure: Up to 250 psig (1724 kPa)
Mounting: ¼ or ½ NPT (depending on model number)
Relay Output: 1 A SPST (NO, C)

RELAY OUTPUT



To Order

Model No.	Description
LVSW-710	¼ NPT level switch, 316 LSS SPST NO relay
LVSW-720	½ NPT level switch, 316 LSS SPST NO relay

Accessory

Model No.	Description
PSU-93	Unregulated 24 Vdc power supply

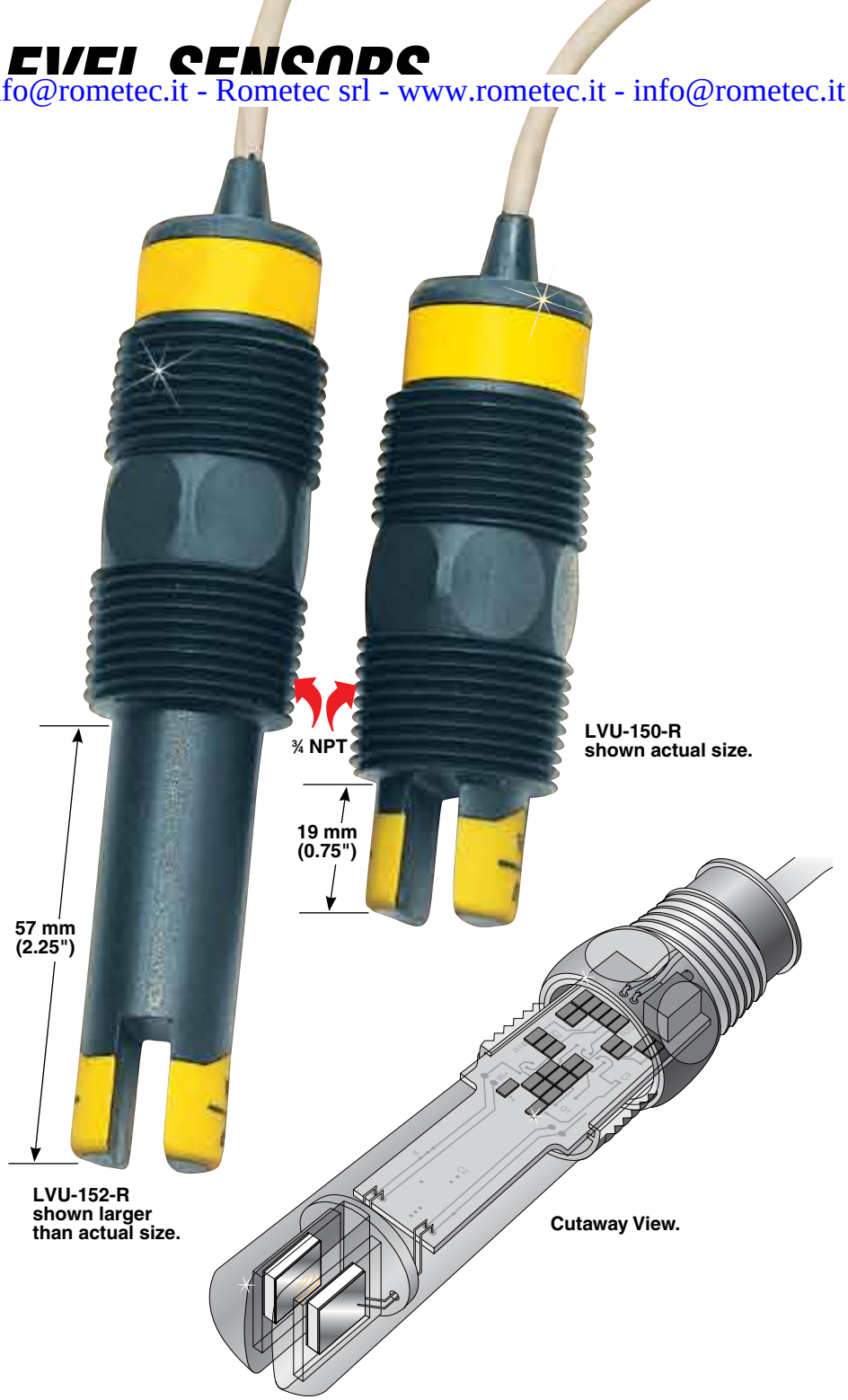
Comes complete with operator's manual.

LVU-150-R Series

1 YEAR WARRANTY RoHS

- **Not Sensitive to Changes In Viscosity, Density, or Conductivity**
- **SPST Relay Standard**
- **Resists Vapor and Turbulence**
- **NEMA 6 (IP68) Submersible Sensor and Cable**

OMEGA's ultrasonic sensors deliver accurate and reliable liquid level detection with an SPST mechanical relay output. The technology provides a high level of ultrasonic sensitivity, including resistance to vapor and turbulence. The ultrasonic sensor utilizes a fork-shaped sensor which contains two piezoelectric crystals, one of which acts as the ultrasonic transmitter, and the other as a receiver. If the air gap between the points of the fork fills with liquid, the sonic wave passes from one crystal to the other.



SPECIFICATIONS

Accuracy: ±1 mm (0.04") in water
Repeatability: ±0.5 mm (0.02") in water
Dead Band Hysteresis: 1 mm in water
Voltage Input: 12 to 36 Vdc
Current Output: 25 mA maximum
Relay:
GP: 120 Vac/Vdc @ 1 A
CE: 60 Vac/Vdc @ 1 A
Switch Mode:
Selectable, NO or NC states
Wetted Materials: Polypropylene (PP) or Perfluoroalkoxy (PFA)
Temperature Rating: -40 to 80ºC (-40 to 176°F)
Maximum Pressure Rating: PP:150 psi @ 25°C (76°F) derated @ 1.667 psi per °C above 25°C (76°F)
Loop Resistance: 600 Ω @ 24 Vdc
Standard Cable Length: 3 m (10')
Maximum Cable Length: 305 m (1000')
Dimensions:
76.2 or 114.3 L x 26.7 mm Dia.
(3.0 or 4.5 x 1.05") (¾ NPT)
Enclosure Rating: NEMA 6 (IP68) submersible sensor and cable

To Order

Model No.	Description	Material	Size (inch)
LVU-150-R	Ultrasonic sensor	PP	3 x ¾ NPT
LVU-151-R	Ultrasonic sensor	PFA	3 x ¾ NPT
LVU-152-R	Ultrasonic sensor	PP	4.5 x ¾ NPT
LVU-153-R	Ultrasonic sensor	PFA	4.5 x ¾ NPT

Comes complete with operator's manual and 3 m (10') cable.
*Two extended cable lengths available. For 7.62 m (25') add suffix "**-25**" to model number, for PP models, or PFA models, for additional cost. For 15.24 m (50') add suffix "**-50**" to model number for PP models, or PFA models, for additional cost.*
***Ordering Examples: LVU-150-R,** polypropylene ultrasonic sensor, 3 x ¾ NPT*
***LVU-153-R.** PFA ultrasonic sensor. 4.5 x ¾ NPT.*

ULTRASONIC LEVEL TRANSMITTER

With PC Programming

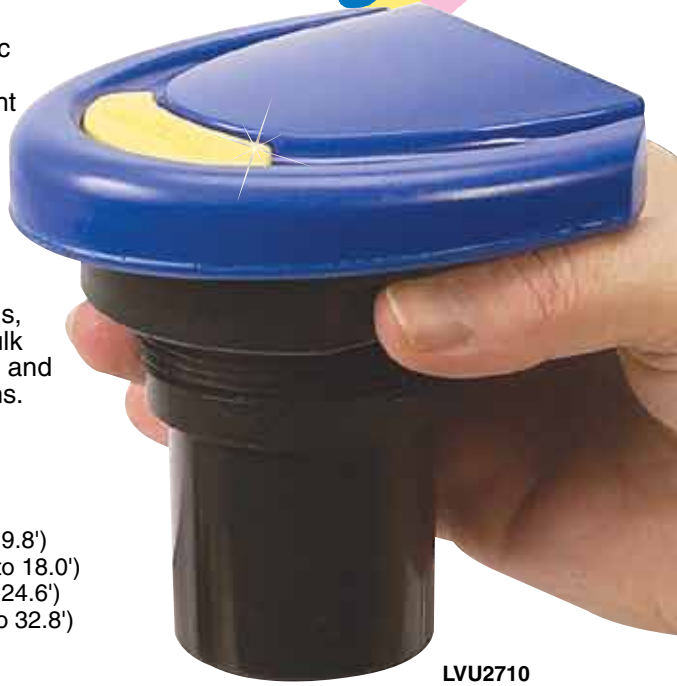
NEW

LVU2700 Series

1 YEAR WARRANTY

- 4 Measurement Ranges from 3 to 10 m (9.8 to 32.8')
- Auto Adaptive Filters Enable Plug and Play Operation
- Fast and Easy Configuration Via Free Software Download and USB Adaptor
- Narrow 5 or 7.6 cm (2 or 3") Beam Width and Short 10 or 20 cm (4 or 8") Dead Band
- PVDF Transducer and NEMA 4X (IP65) Polycarbonate Enclosure
- Automatic Temperature Compensation for Accurate Measurement

OMEGA's LVU2700 ultrasonic level transmitter provides continuous level measurement up to 10 m (32.8') with a 4 to 20 mA signal output, and is configured via free software download and a USB adaptor. This non-contact liquid level sensor is ideally suited for corrosive, ultrapure, sticky or dirty liquids, and is broadly selected for bulk storage, day tank, lift stations and process tank level applications.



LVU2710

SPECIFICATIONS

Range
- **LVU2710:** 10 cm to 3 m (4" to 9.8')
- **LVU2718:** 20 cm to 5.5 m (8" to 18.0')
- **LVU2726:** 20 cm to 8 m (8" to 24.6')
- **LVU2732:** 20 cm to 10 m (8" to 32.8')

Accuracy: ±0.2% of range

Resolution
- **LVU2710:** 0.5 mm (0.019")
- **LVU2718:** 1 mm (0.039")
- **LVU2726/32:** 2 mm (0.079")

Dead Band
- **LVU2710:** 10 cm (4")
- **LVU2718/26/32:** 20 cm (8")

Beam Width
- **LVU2710:** 5 cm (2")
- **LVU2718/26/32:** 7.6 cm (3")

Configuration: USB PC Windows®

USB 2.0 Memory: Non-volatile.

The level sensor is configurable via our free PC software download and USB adaptor. The sensors are offered with and without USB connectors. Connectors can be used to configure any compatible level product. Download your free copy at: **omega.com/ftp**

Supply Voltage: 24 Vdc (loop)

Consumption: 0.5 W

Loop Resistance: 500 Ω @ 24 Vdc

Signal Output: 4 to 20 mA, two-wire

Signal Invert: 4 to 20 mA or 20 to 4 mA

Signal Fail-Safe: 4 mA, 20 mA, 21 mA, 22 mA or hold last

Process Temp: -20 to 60°C (-4 to 140°F)

Temp Comp: Automatic

Ambient Temp: -35 to 60°C (-31 to 140°F)

Pressure: Maximum Working Pressure = 2 bar (30 psi)

Enclosure Rating: NEMA 4X (IP65)

Enclosure Material: Polycarbonate

Trans Material: PVDF

Cable Jacket Material: Polyurethane

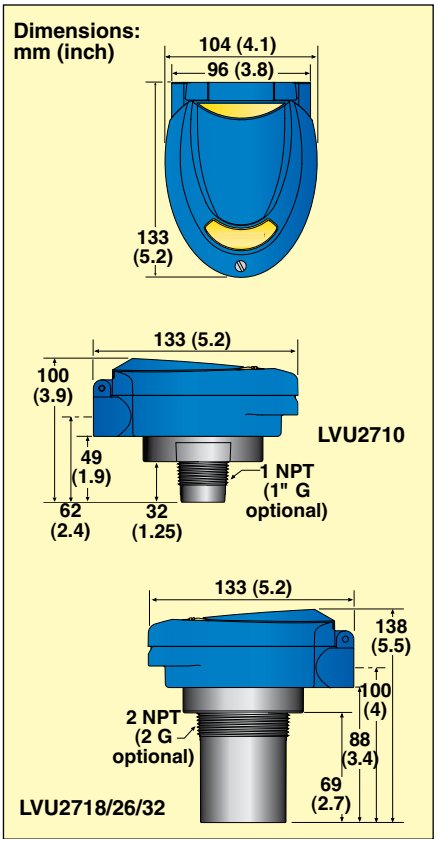
Cable Type: 4-conductor, shielded

Process Mount:
- **LVU2710:** 1 NPT (1" G optional)
- **LVU2718/26/32:** 2 NPT (2" G optional)

Mount Gasket: FKM

Classification: General purpose

Dimensions: mm (inch)



To Order *Visit omega.com/lvu2700 for Pricing and Detail*

Model No.	Description
LVU2710	Ultrasonic level transmitter with USB connector, range 3 m (9.8')
LVU2718	Ultrasonic level transmitter with USB connector, range 5.5 m (18')
LVU2726	Ultrasonic level transmitter with USB connector, range 8 m (26.2')
LVU2732	Ultrasonic level transmitter with USB connector, range 10 m (32.8')
LVU2710-B*	Ultrasonic level transmitter, range 3 m (9.8')
LVU2718-B*	Ultrasonic level transmitter, range 5.5 m (18')
LVU2726-B*	Ultrasonic level transmitter, range 8 m (26.2')
LVU2732-B*	Ultrasonic level transmitter, range 10 m (32.8')
LVCN414-USB	USB connector (1 required for **-B** models, sold separately)*

Comes complete with software, mounting gasket and operator's manual.

*For units with G threads add **"-G"** to model number, for additional cost.*

*Configuration software for programming available free at **omega.com/ftp***

***Ordering Example: LVU2710,** level transmitter with 4 to 20 mA output and USB connector, 1 NPT. 3 m (9.8') range.*

REFLECTIVE ULTRASONIC LEVEL TRANSMITTER

With Alarms for Small Tanks

- ✓ **Offered in 1.5m (4.9′) and 3m (9.8′) measurement ranges**
- ✓ **Fail-safe diagnostics with selectable relay and signal outputs**
- ✓ **Narrow 2″ (5cm) beam width for applications with limited space**
- ✓ **Corrosion resistant PVDF transducer and compact PP enclosure**
- ✓ **Short 1.5″ (3.8cm) dead band maximizes tank filling capacity**
- ✓ **Automatic temperature compensation from -40º to 80º C.**

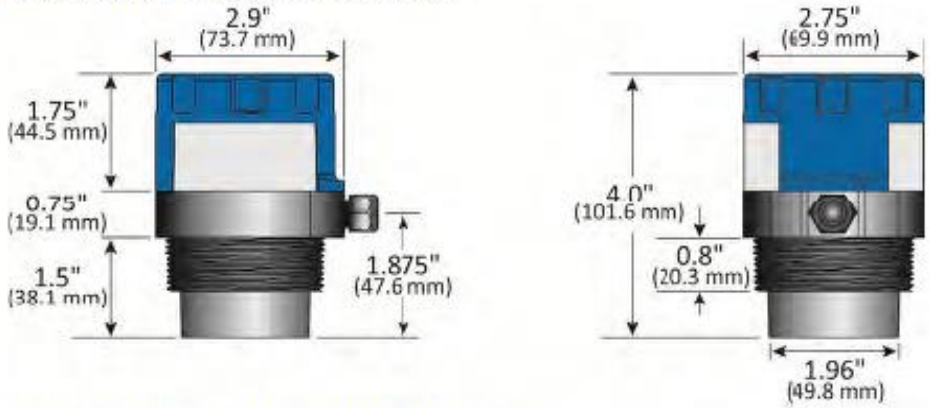
The LVU500 Series general purpose reflective ultrasonic multi-function level transmitter provides continuous level measurement up to 3 m (9.8′) with a 4-20 mA analog signal output and four relays and is configured via web calibration software. The non-contact liquid level sensor features our proprietary Reflective Technology™ that delivers reliable level measurement in condensing environments. Each relay can be configured for alarm, automatic fill or empty functions. Select this sensor for small tanks with chemicals, water, wastewater and oil (non-foaming and/or highly vaporous liquids). Typical applications include day tank, IBC or drum, cooling tower, skid or machine, process tank and waste sumps.

Specifications

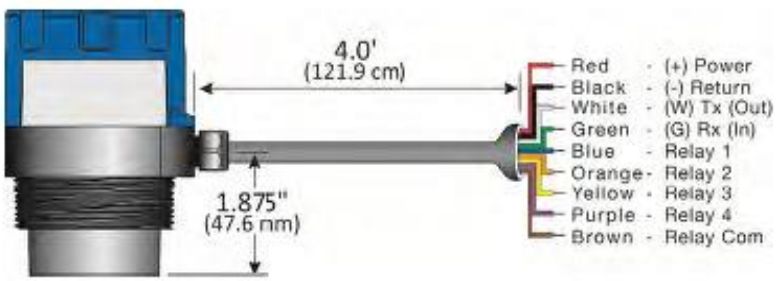
Range: LVU501: 1.5″ to 4.9′ (3.8 cm to 1.5 m), LVU503: 4″ to 9.8′ (10.1 cm to 3 m)
Accuracy: LVU501: 0.125″ (3 mm), LVU503: ± 0.2% of range
Resolution: LVU501: 0.019″ (0.5 mm), LVU503: 0.039″ (1 mm)
Deadband: LVU501: 1.5″ (3.8 cm), LVU503: 4″ (10.1 cm)
Beam width: 2″ (5 cm)
Configuration: WebCal® PC Windows® USB® 2.0
Memory: Non-volatile
Supply voltage: 14-28 VDC
Max. consumption: 0.5W
Loop resistance: 500 ohms @ 24 VDC
Signal output: 4-20 mA, two-wire
Signal invert: 4-20 mA or 20-4 mA
Signal fail-safe: 4 mA, 20 mA, 21 mA, 22 mA, hold last
Contact type: (4) SPST relays
Contact rating: 60 VA, 1A maximum
Contact fail-safe: Open, closed, hold last
Contact hysteresis: Selectable
Process temp.: F: -40 to 176º, C: -40 to 80º
Temp. comp.: Automatic
Ambient temp.: F: -31 to 140º, C: -35 to 60º
Pressure: 30 psi (2 bar)
Enclosure rating: Type 6P (IP68)
Encl. material: Polypropylene
Transducer type: Reflective Ultrasonic
Transducer mat.: Polyvinylidene fluoride
Cable jacket mat.: Polyurethane
Cable type: 9-conductor, shielded
Cable length: 48″ (1.2m)
Process mount: 2″ NPT, or 2″ G
Mount gasket: 2″ G FKM®
Classification: General purpose
Approval: UL 61010-1
Compliance: CE, RoHS

Dimensions

Dimensions for LVU501 & LVU503 Series



Cable Dimensions for LVU501 & LVU503 Series



2" Tank Adapter
Socket x Thread
(LVU800-2B shown)

Tank Adapter (LVU800-3B)
w/ 3"x 2" Reducer Bushing
(LVU800-3N40)

LVU500-USB USB® Fob

LVM-30 Shown

LVU800-3N40

To Order	
Model No.	**Description**
LVU501	2” NPT Level Transmitter 4.9’ (1.5M) range, 4 SPST relays, w/ Fob USB Interface
LVU501-B	2” NPT Level Transmitter 4.9’ (1.5M) range, 4 SPST relays, w/o Fob USB Interface
LVU501-G	2” BSPP Level Transmitter 4.9’ (1.5M) range, 4 SPST relays, w/ Fob USB Interface
LVU501-G-B	2” BSPP Level Transmitter 4.9’ (1.5M) range, 4 SPST relays, w/o Fob USB Interface
LVU503	2” NPT Level Transmitter 9.8’ (3M) range, 4 SPST relays, w/ Fob USB Interface
LVU503-B	2” NPT Level Transmitter 9.8’ (3M) range, 4 SPST relays, w/o Fob USB Interface
LVU503-G	2” BSPP Level Transmitter 9.8’ (3M) range, 4 SPST relays, w/ Fob USB Interface
LVU503-G-B	2” BSPP Level Transmitter 9.8’ (3M) range, 4 SPST relays, w/o Fob USB Interface
Accessories	
Model No.	**Description**
LVU800-2B	2” NPT bulkhead fitting, PVC
LVU800-3B	3” NPT bulkhead fitting, PVC
LVU800-3N40	3” thread x 2” thread, NPT, PVC, schedule 40
LVU800-3S40	3” Socket x 2” thread, NPT, PVC, schedule 40
LVU800-3N80	3” thread x 2” thread, NPT, PVC, schedule 80
LVU800-3S80	3” Socket x 2” thread, NPT, PVC, schedule 80
LVU800-4N80	4” thread x 2” thread, NPT, PVC, schedule 80
LVU800-4S80	4” Socket x 2” thread, NPT, PVC, schedule 80
LVM-30	2” NPT side mount bracket, PP
LVM-30G	2” G side mount bracket, PP
LVU500-USB	FOB for programming LVU500 or LVU700 series level transmitters

REFLECTIVE ULTRASONIC LEVEL TRANSMITTER

For Large Tanks

- ✓ **Offered in 6m (19.6') and 12m (39.3') measurement ranges**
- ✓ **Corrosion resistant PVDF transducer with IP68 PP enclosure**
- ✓ **Fail-safe diagnostics with selectable signal fail-safe outputs**
- ✓ **LCD display indicates level in inches, meters or percent of span**
- ✓ **Narrow 3" (7.6cm) beam width for applications with limited space**
- ✓ **Windowed enclosure cap provides liquid tight level indication**
- ✓ **Configuration via push button display or LVCN414-SW software**
- ✓ **Automatic temperature compensation from -40º to 80º C.**

The LVU700 Series general purpose reflective ultrasonic level transmitter provides continuous level measurement up to 39.3' (12m) with a 4-20 mA analog signal output and is configured via its integral push button display module or LVCN414-SW software. The non-contact liquid level sensor features our proprietary Reflective Technology™ that delivers reliable level measurement in condensing environments. Select this sensor for bulk tanks with chemicals, water, wastewater and oil (non-foaming and/or highly vaporous liquids). Typical applications include bulk storage, neutralization tank, clarifier and waste sumps.

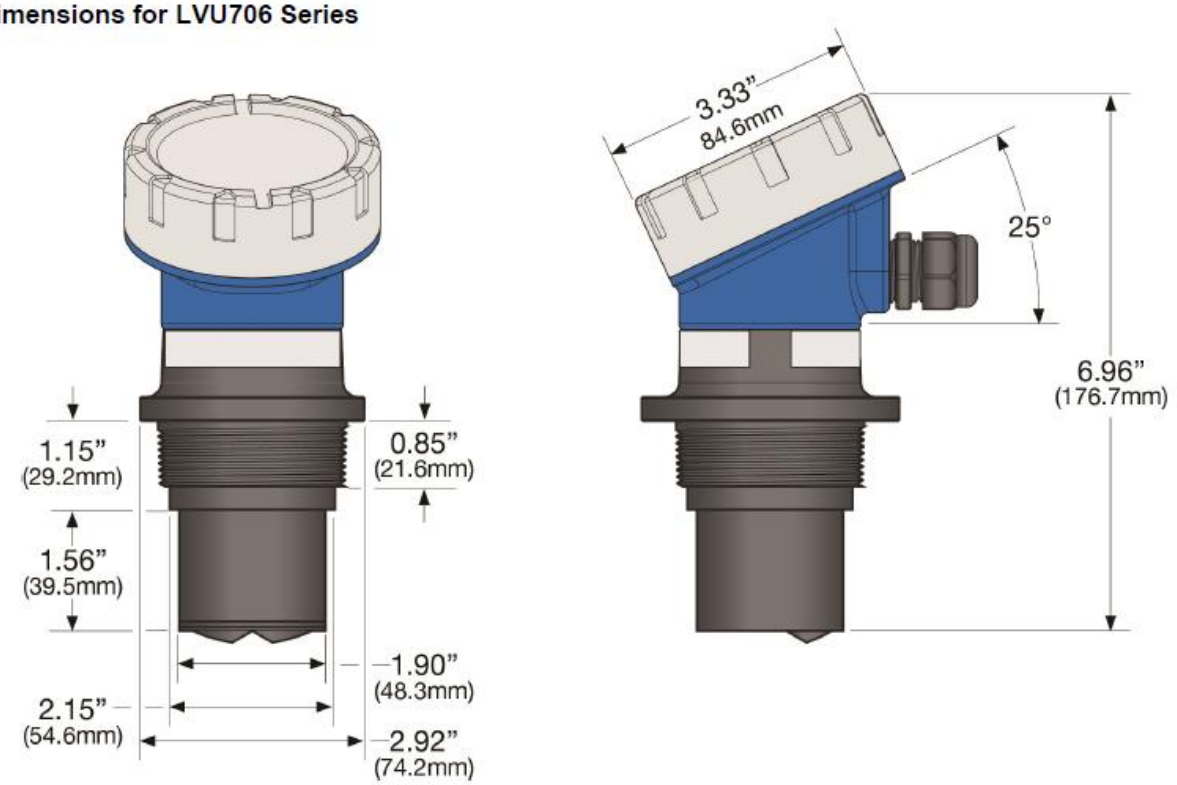
Specifications

Range: LVU706: 8" to 19.6' (20cm to 6m), LVU712: 18" to 39.3' (45.7cm to 12m)
Accuracy: ± 0.2% of range
Resolution: LVU706: 0.079" (2mm), LVU712: 0.196" (5mm)
Deadband: LVU706: 8" (20.3cm) , LVU712: 18" (45.7cm)
Beam width: LUV706: 3" (7.6cm), LUV712:

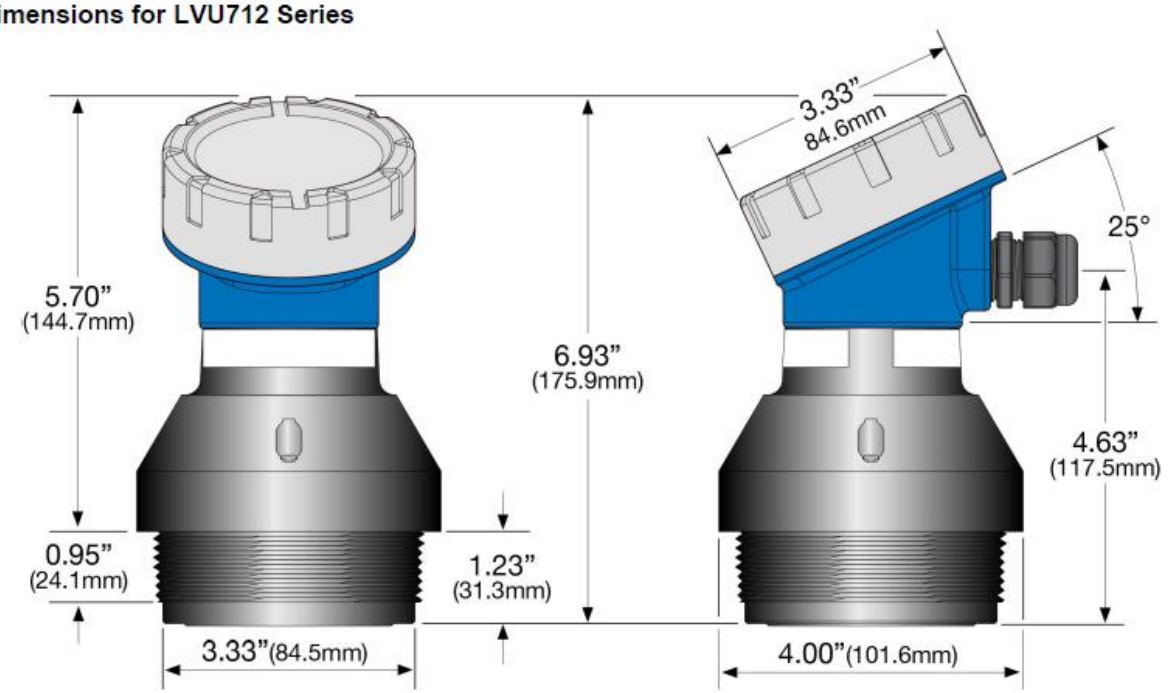
6" (15.2cm)
Configuration: Push button or WebCal® PC Windows® USB® 2.0
Memory: Non-volatile
Display: LCD, 6-digit
Display units: Inch, cm, or percent
Supply voltage: 14-28 VDC
Max. consumption: 0.5W
Loop resistance: 500 ohms @ 24 VDC
Signal output: 4-20 mA, two-wire
Signal invert: 4-20 mA or 20-4 mA
Signal fail-safe: 4 mA, 20 mA, 21 mA, 22 mA, hold last
Process temp.: -40 to 176ºF, (-40 to 80ºC)
Temp. comp.: Automatic
Ambient temp.: -31 to 140ºF, (-35 to 60ºC)
Pressure: 30 psi (2 bar)
Enclosure rating: Type 6P (IP68)
Encl. material: Polypropylene
Encl. cap material: Clear polypropylene
Enclosure vent: Water tight membrane
Conduit entrance: ½" NPT
Transducer type: Reflective Ultrasonic
Transducer mat.: Polyvinylidene fluoride
Process mount: LVU706: 2" NPT or 2" G
LVU712: 3" NPT or 3" G
Mount gasket: 2" NPT: N/A, 2" G: Viton®
Classification: General purpose
Approval: UL 61010-1
Compliance: CE, RoHS

Dimensions

Dimensions for LVU706 Series



Dimensions for LVU712 Series



To Order	
Model No.	**Description**
LVU706-B	2” NPT Level Transmitter 19.6 ft range, 4 to 20 mA output, w/o Fob USB Interface
LVU706	2” NPT Level Transmitter 19.6 ft range, 4 to 20 mA output, w/ Fob USB Interface
LVU706-G-B	2” BSPP Level Transmitter 19.6 ft range, 4 to 20 mA output, w/o Fob USB Interface
LVU706-G	2” BSPP Level Transmitter 19.6 ft range, 4 to 20 mA output, w/ Fob USB Interface
LVU712-B	2” NPT Level Transmitter 39.3 ft range, 4 to 20 mA output, w/o Fob USB Interface
LVU712	2” NPT Level Transmitter 39.3 ft range, 4 to 20 mA output, w/ Fob USB Interface
LVU712-G-B	2” BSPP Level Transmitter 39.3 ft range, 4 to 20 mA output, w/o Fob USB Interface
LVU712-G	2” BSPP Level Transmitter 39.3 ft range, 4 to 20 mA output, w/ Fob USB Interface
Accessories	
Model No.	**Description**
LVU500-USB	FOB for programming LVU500 or LVU700 series level transmitters

ULTRASONIC LEVEL TRANSMITTER

LVU800 Series

1 YEAR WARRANTY

- **Simple, Fast Setup with Pushbutton Calibration and LCD Display**
- **Three Measurement Ranges Available up to 10 m (32')**
- **6-segment LCD Display Indicates Air Gap or Liquid Level (Inch or Centimeter Units)**
- **7.6 cm (3") Minimum Beam Width for Applications with Restricted Space**
- **NEMA 4X (IP65) Enclosure with Rugged PVDF Transducer**
- **Fail-Safe Intelligence with Diagnostic Feedback for Easy Troubleshooting**

The LVU800 Series general purpose 2-wire ultrasonic transmitter provides non-contact level measurement up to 10 m (32'), and is ideally suited for challenging ultrapure, corrosive or waste liquids. Pushbutton calibrated, the transmitter is broadly selected for atmospheric bulk storage, day tank and waste sump applications. Media examples include wastewater and sodium hydroxide.

SPECIFICATIONS

Range:
LVU809: 10 cm to 3 m (4" to 9.8')
LVU816: 20 cm to 5.5 m (8" to 18')
LVU826: 20 cm to 8 m (8" to 26.2')
LVU832: 30 cm to 10 m (12" to 32.8')
Accuracy: ±0.2% of span
Resolution:
LVU809: 0.5 mm (0.019")
LVU816/826: 1 mm (0.039")
LVU832: 2 mm (0.078")
Beam Width:
LVU809: 5 cm (2")
LVU816/826/832: 7.6 cm (3") diameter
Deadband:
LVU809: 10 cm (4")
LVU816: 20 cm (8")
LVU826: 20 cm (8")
LVU832: 30 cm (12")
Display Type: LCD, 6-digit
Display Units: Inch, cm or percent
Display Mode: Air gap or liquid height
Memory: Non-volatile
Supply Voltage: 12 to 28 Vdc
Loop Resistance: 500 Ω @ 24 Vdc
Signal Output: 4 to 20 mA, 2-wire
Signal Invert: 4 to 20 mA or 20 to 4 mA
Calibration: Pushbutton
Fail-Safety: Selectable 4 mA, 20 mA, 21 mA, 22 mA or hold
Process Temperature: -20 to 60°C (-7 to 140°F)
Temperature Compensation: Automatic
Electronics Temperature: -40 to 71°C (-40 to 160°F)
Pressure: 30 psi (2 bar) @ 25°C, derated @ 1.667 psi (0.113 bar) per above 25°C
Enclosure Rating: NEMA 4X (IP65)
Enclosure Vent: Watertight membrane
Enclosure Material: PC/ABS FR
Transducer Material: PVDF
Process Mount:
LVU809: 1 NPT or 1" G
LVU816/826/832: 2 NPT or 2" G
Mounting Gasket: FKM
Conduit Entrance: Dual, ½ NPT
Classification: General purpose
CE compliance EN 61326 EMC

LVU816, shown smaller than actual size.

To Order

Model No.	Description
LVU809	2-wire transmitter 3 m (9.8') range, display 1 NPT
LVU809-G	2-wire transmitter 3 m (9.8') range, display 1" straight threads
LVU816	2-wire transmitter 5.5 m (18') range, display, 2 NPT
LVU816-G	2-wire transmitter 5.5 m (18') range, display, 2" straight threads
LVU826	2-wire transmitter 8 m (26.2') range, display, 2 NPT
LVU826-G	2-wire transmitter 8 m (26.2') range, display, 2" straight threads
LVU832	2-wire transmitter 10 m (32.8') range, display, 2 NPT
LVU832-G	2-wire transmitter 10 m (32.8') range, display, 2" straight threads
LVM-30	Side mount bracket

Comes complete with operator's manual.
***Ordering Examples: LVU816,** 2-wire transmitter 5.5 m (18') range, 2 NPT.*
***LVU816-G,** 2-wire transmitter, 5.5 m (18') range, 2" G connection.*

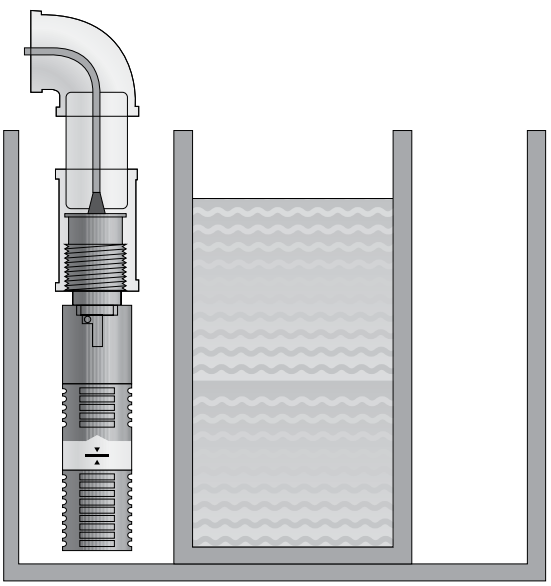
LVV-110 Series

1 YEAR WARRANTY · CE · RoHS

- **Unique Filling Baffle Eliminates Surface Chatter**
- **Dynamically Stabilized Float**
- **Selectable Normally Open or Normally Closed States**
- **Mounted Vertically Wet or Dry**
- **Available In Quality Reed Switch**
- **NEMA 8 (IP68) Submersible Sensor Body and Cable**

LVV-110 shown smaller than actual size.

The LVV-110 Series unique vertical buoyancy sensors are technically the most advanced float available today. The filling baffle causes the float to be filled below the liquid surface, thereby eliminating the effects of surface tension. The self flushing design also encourages particulate matter to be purged through the baffles. The sensors are conveniently available in a reed switch.



Secondary containment tank

SPECIFICATIONS

Accuracy: ±2 mm in water
Repeatability: ±1 mm in water
Extreme Orientation: ±20° from vertical
Specific Gravity: 0.8 min.
Switch Type: For LVV-110, 111; SPDT for LVV-120, 121
Switch Voltage: 120 Vac, 120 Vdc @ 15 VA for LVV-110, 111; @ 50 VA for LVV-120, 121
Switch Output: Selectable NO or NC States
Temperature Range: -40 to 90°C (-40 to 194°F)
Pressure Range: 25 psi (2 bar) @ 25°C; derated @ 1.667 psi (0.113 bar) per °C above 25°C
Probe Material: PP or PVDF
Probe Rating: NEMA 6 (IP68)
Mounting Threads: ¾ NPT
Cable Type: 2.4 m (8'), 3-wire, 22 gauge with ground, shield and PP or PFA jacket
Maximum Cable Length: Up to 152 m (500')
Dimensions: 13.7 x 2.67 or 8.1 x 2.67 cm (5.4 x 1.05 or 3.2 x 1.05"), ¾ NPT

To Order

Model No.	Description	Mat'l	Size
LVV-110	Sensor-reed switch	PP	4.5 x ¾ NPT
LVV-111	Sensor-reed switch	PVDF	4.5 x ¾ NPT
LVV-120	Sensor-reed switch	PP	2.75 x ¾ NPT
LVV-121	Sensor-reed switch	PVDF	2.75 x ¾ NPT

Comes complete with operator's manual.

*Two extended cable lengths available. For 7.62 m (25') add suffix "**-25**" to model number, for additional cost, for PP models, or PVDF models, for additional cost. For 15.24 m (50') add suffix "**-50**" to model number, for additional cost, for PP models, or PVDF models.*

***Ordering Examples: LVV-110,** sensor, PP.*

***LVV-121,** sensor, PVDF.*