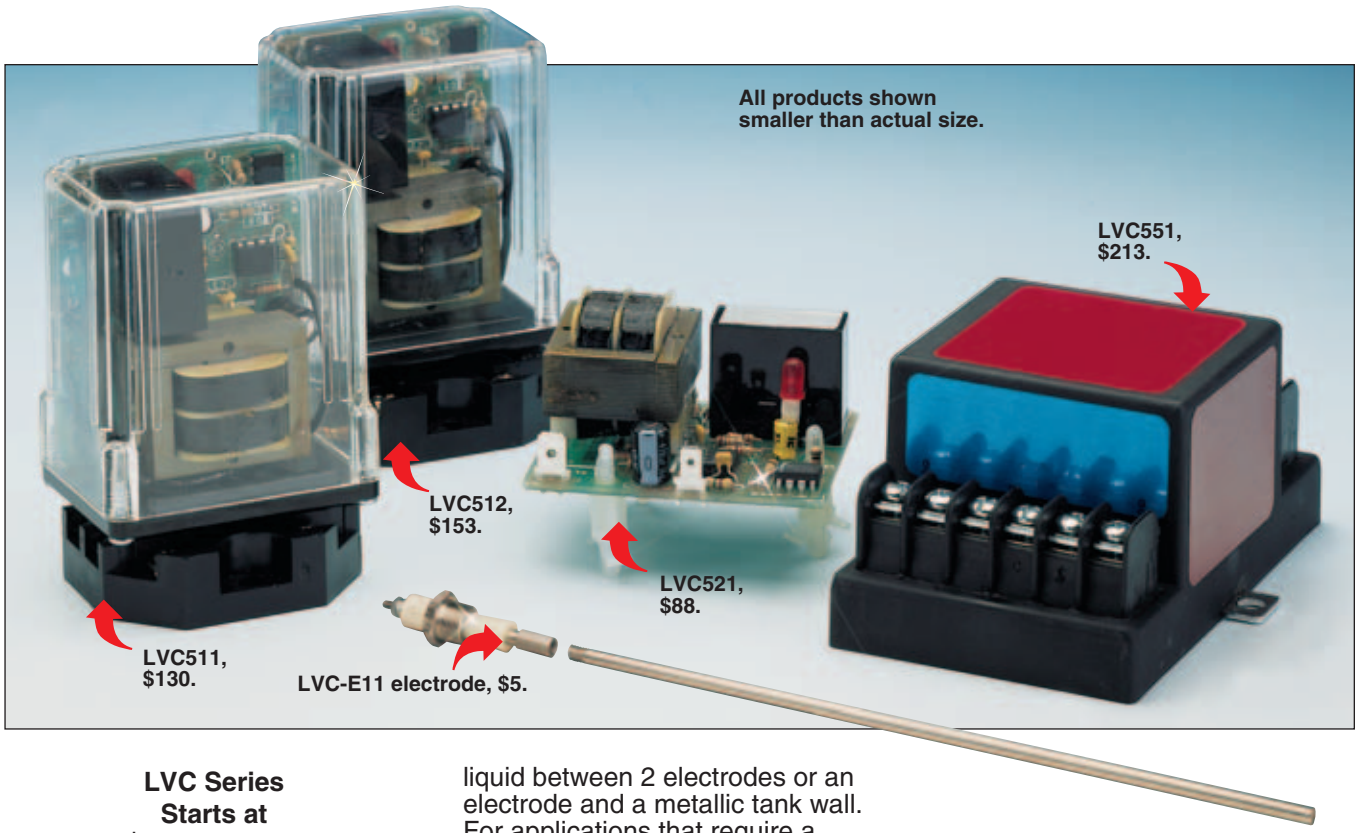
LOW-COST CONDUCTIVITY LEVEL SWITCH SYSTEMS *For Liquids Only*



LVC Series Starts at

$130

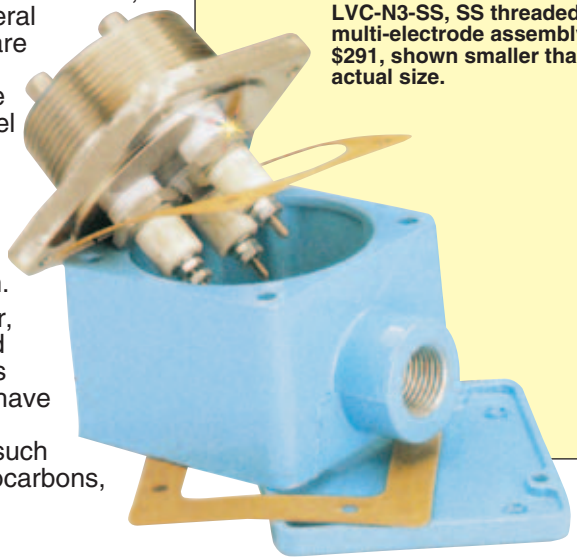
MADE IN USA 1 YEAR WARRANTY

- **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, $291, 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.

Electronics Modules Mounting Assemblies

Specifications

- **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
- UL multiple listed to UL standard 508

LVC512 Model:

- Field-settable sensitivity to match a variety of liquids
- Required for distilled water (1 MΩ max)
- UL multiple listed to UL standard 508

LVC521 Model:

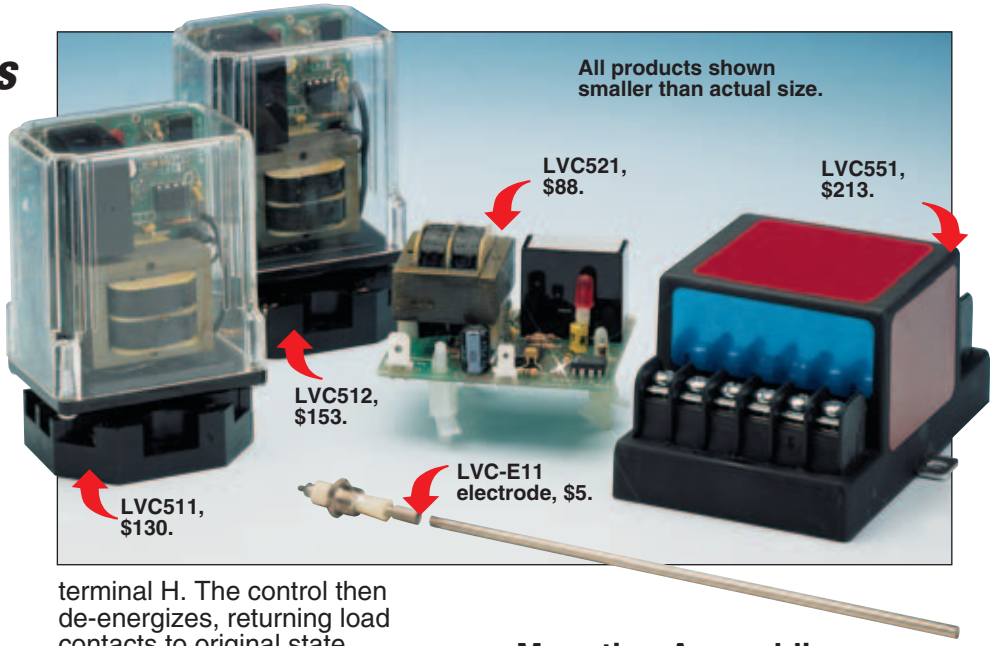
- Open circuit board construction
- Low cost, OEM style
- Spade terminal connections
- Designed to mount on 1/16" backplate with supplied plastic standoffs
- UL listed for non-hazardous environments
- Relay status LED

LVC550 Series:

- Intrinsically safe
- Approved for Class I and II, Division 1, Groups A through G
- 8 A relay output
- LVC553: CSA approved LVC55: 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

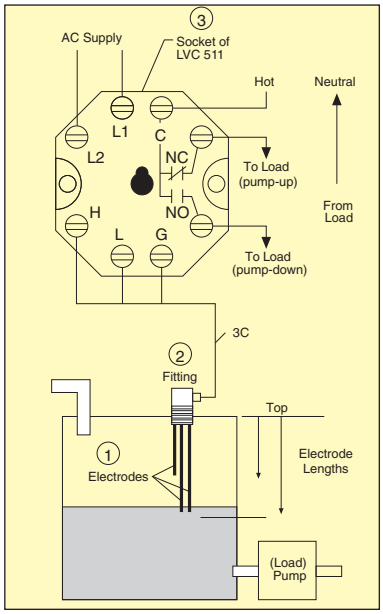
Electrode Weight:
0.25 g/mm (0.167 lb/ft)

Electronic Modules

LVC Model	Power Consumption	Dimensions: mm (in) H	W	L	Shipping Weight g (oz)
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)
553	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 (in) H	W	L	Housing Conduit Size
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, $6.

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 **($5)**
2) 2 **LVC-E12** electrodes **(@$10 each)**
3) 1 **LVC511** electronics module **($130)**
4) 1 **LVC-N3-BR** 2 MNPT brass, 3-electrode mounting assembly **($160)**
5) One 100' roll of **TX4-100** 4-conductor shielded copper cable **($35)**

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.

Total Price = $350

[5 + (10 x 2) + 130 + 160 + 35 + **$350**]

Electrodes

MOST POPULAR MODELS HIGHLIGHTED!

1 **To Order** *(Specify Model Number)*

Model Number	Price	Material	Model Number	Price	Material	Length mm (in)
LVC-E11	**$5**	303 SS	**LVC-E51**	**$ 6**	316 SS	305 (12)
LVC-E12	**10**	303 SS	**LVC-E52**	**12**	316 SS	610 (24)
LVC-E13	**15**	303 SS	**LVC-E53**	**18**	316 SS	915 (36)
LVC-E14	**20**	303 SS	**LVC-E54**	**24**	316 SS	1220 (48)
LVC-E15	**25**	303 SS	**LVC-E55**	**30**	316 SS	1525 (60)
LVC-E16	**30**	303 SS	**LVC-E56**	**36**	316 SS	1830 (72)*

** Beyond 1.8 m (72"), probes require Teflon® 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 Number	Price	Description	Wetted Materials	Max Pressure at Max Temperature
LVC-S3	**$27**	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	Price	Brass	Price	Cast Iron	Price	Wt. kg (lb)	Description
LVC-N1-SS	**$218**	**LVC-N1-BR**	**$87**	**LVC-N1-C**	**$62**	3.9 (1.8)	1 MNPT, for 1 LVC-E electrode
LVC-N2-SS	**254**	**LVC-N2-BR**	**123**	**LVC-N2-C**	**98**	5.7 (2.6)	2 MNPT, for 2 LVC-E electrodes
LVC-N3-SS	**291**	**LVC-N3-BR**	**160**	**LVC-N3-C**	**135**	7.2 (3.25)	2 MNPT, for 3 LVC-E electrodes
LVC-N4-SS	**333**	**LVC-N4-BR**	**196**	**LVC-N4-C**	**171**	8.4 (3.8)	2½ MNPT, for 4 LVC-E electrodes
LVC-N5-SS	**351**	**LVC-N5-BR**	**208**	**LVC-N5-C**	**200**	11.4 (5.2)	3 MNPT, for 5 LVC-E electrodes
LVC-N6-SS	**400**	**LVC-N6-BR**	**269**	**LVC-N6-C**	**244**	11.4 (5.2)	3 MNPT, for 6 LVC-E electrodes
LVC-N7-SS	**436**	**LVC-N7-BR**	**305**	**LVC-N7-C**	**280**	11.6 (5.25)	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	Price	Cast Iron	Price	Nominal Pipe, Flange Size and Description	Flange Dia. mm (in)	Weight kg (lb)
LVC-F1-SS	**$354**	**LVC-F1-CI**	**$182**	1", for 1 LVC-E electrode	108 (4.25)	1.25 (2.75)
LVC-F2-SS	**391**	**LVC-F2-CI**	**219**	2", for 2 LVC-E electrodes	152 (6)	2.9 (6.5)
LVC-F3-SS	**427**	**LVC-F3-CI**	**255**	2", for 3 LVC-E electrodes	152 (6)	3.0 (6.7)
LVC-F4-SS	**464**	**LVC-F4-CI**	**292**	2½", for 4 LVC-E electrodes	178 (7)	3.6 (7.9)
LVC-F5-SS	**500**	**LVC-F5-CI**	**328**	3", for 5 LVC-E electrodes	190 (7.5)	5 (11)
LVC-F6-SS	**536**	**LVC-F6-CI**	**364**	3", for 6 LVC-E electrodes	190 (7.5)	4.9 (10.9)
LVC-F7-SS	**573**	**LVC-F7-CI**	**401**	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	Price	Description	Max Media Resistance
LVC511	**$130**	10 A resistive at up to 120 Vac, 8-pin socket	50,000
LVC512	**153**	10 A resistive at up to 120 Vac, 11-pin socket	(Field adjustable from 4700 to 1 million Ω)
LVC521	**88**	10 A resistive at up to 120 Vac, open circuit board	50,000
Intrinsically Safe Relay Electronics			
LVC551	**$213**	8 A resistive at up to 120 Vac, FM listed	(Field adjustable from 0 to 470,000 Ω)
LVC552	**213**	8 A resistive at up to 120 Vac, UL listed	100,000
LVC553	**213**	8 A resistive at up to 120 Vac, CSA listed	100,000

Comes complete with operator's manual.
*Direct action standard; for inverse action, add suffix **"-INV"** to model number; **LVC551** through **LVC553**, add **$5** to price; no extra cost on the **LVC511** to **LVC521.***
Inverse normally used for pump-up or low-level applications.
*For 240 Vac operation, add suffix **"-240VAC"** to model number (not available for **LVC553**); add **$40** to price for the **LVC 552** and **LVC512.** For 24 Vdc operation, add suffix **"-24V"** to model number and add **$40** to price.*

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