



point level detection – liquids

ELS Series

Conductive (Electrode) Level Sensors

- Usable in a wide range of liquids
- Up to 7 pole configuration
- Safe low voltage and small currents
- Switch points easily adjusted in field
- Simple to install and adjust large terminal enclosure for wiring

The ELS series of level sensors are designed for point indication of conductive liquids. Used in conjunction with one or more RCU7000 relays (see Controllers section for RCU7000 specifications), the ELS series can reliably detect up to 7 separate levels in tanks up to seven feet deep.

Operating levels can be easily changed in the field by cutting the length of the electrodes. The standard electrodes are manufactured from 316SS. For applications with unique chemical compatibility problems contact STI for information about electrodes in titanium or Hastelloy B and C.

■ Operational Description

A typical system consists of three major components. An electrode holder, the electrodes and a relay unit.

The electrode holder serves as a mechanical support for the electrodes and electrically insulates them from the tank.

The electrodes are vertically mounted to the holder, above the liquid, with their lower ends positioned at the required actuation levels.

The relay unit provides the voltage and current required (8 VAC, 5 mA max.) for sensing as well as suitable relay outputs.

■ Applications

The ELS series switches can be used in any suitable, conductive liquid. Applications involve both alarm point detection and pump valve control. Standard electrodes available with the switch are 39 in. long and can be lengthened by simply screwing on each extension electrode.

Since the system contains no moving parts it is very reliable and can be used in tanks where mixers or other moving equipment would damage ordinary float switches or level detectors.

■ Intrinsic Safety

Any of the STI conductive level controls may be used with STI Intrinsic Safety Barriers (IS) to meet hazardous location requirements for a level control device.



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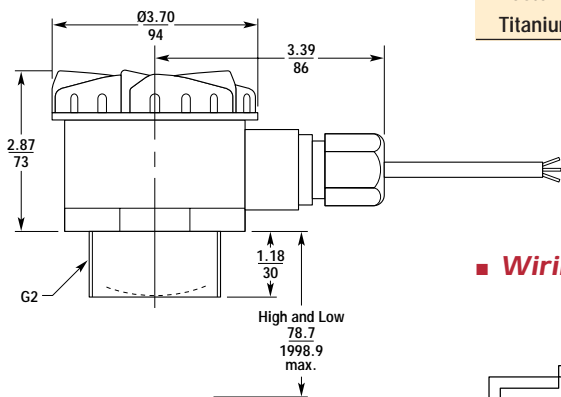
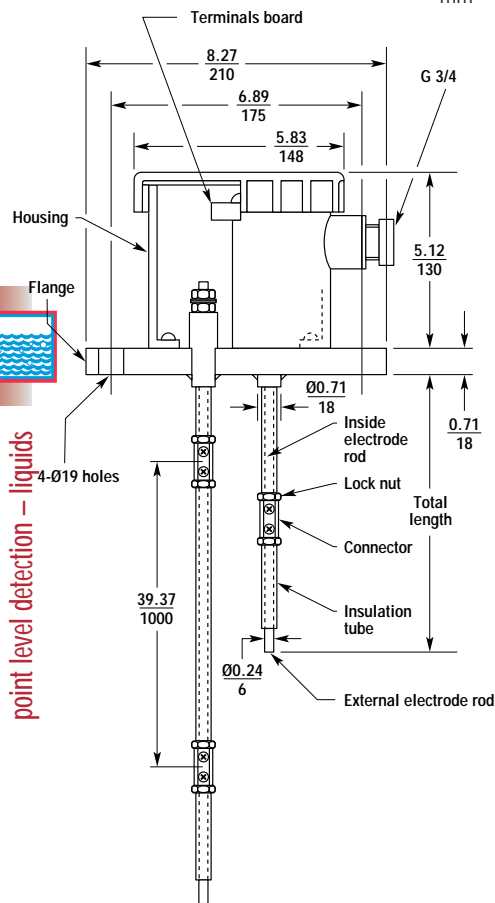
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On the Internet: www.stiautomationproducts.com E-mail: sales@stiautomationproducts.com

ELS Series – Conductive Level Sensors

■ Dimensions

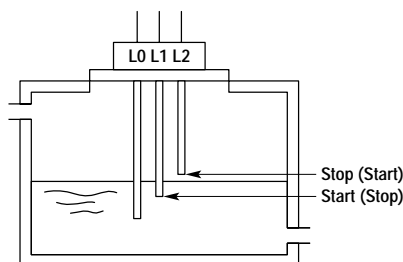
in.
mm



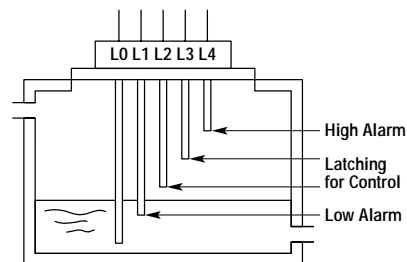
■ Specifications

Model	ELS	ELS-S
Dimensions in. (mm)		
Connections:	PVC flange from 4 in. (Standard: JIS 10K4B)	Stainless steel flange from 4 in. (304SS or 316SS)
Operating Temperature:	-4 to 140°F (-20 to 60°C) (No freezing under 32°F (0°C))	-4 to 140°F (-20 to 100°C) (No freezing under 32°F (0°C)) Optional 150°C
Maximum Pressure:	29 psi (2 bar)	145 psi (10 bar)
Housing Material:	ABS	ABS
Enclosure Protection:	IP43 (IP55 is optional)	IP43 (IP55 is optional)
Cable Entry:	G 3/4	
Insulation Tube		
Standard:	PE (max. 100°C)	
Optional:	FEP (max. 150°C)	
Electrode Material		
316SS:	For water, ammonia, caustic soda, etc.	
Hastelloy B:	For hydrochloric acid, etc.	
Hastelloy C:	For low temperature hydrochloric acid, sulfuric acid, etc.	
Titanium:	For sea water, high temperature and concentrated nitric acid, ferric chloride, etc.	

■ Wiring



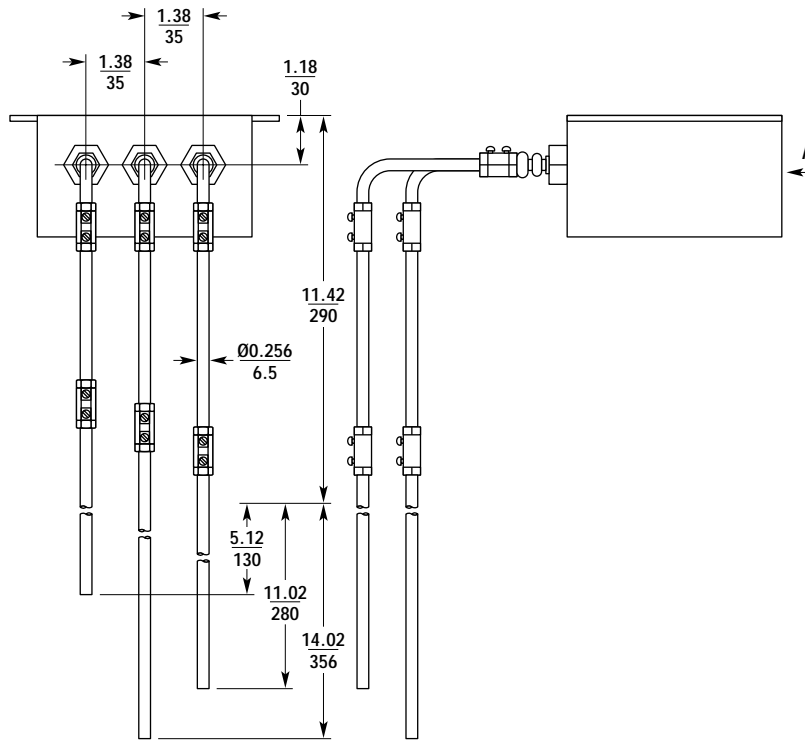
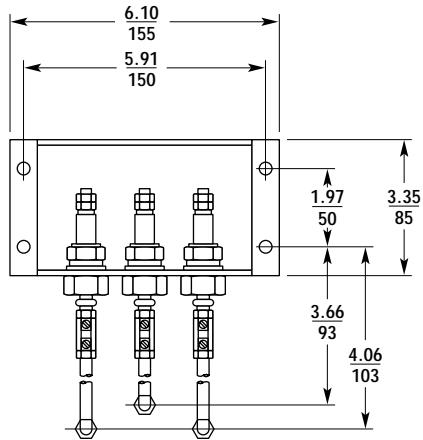
Select. SW. H. ON Side: Empty Control
Select. SW. L. ON Side: Fill Control



To Assist Your Selection Process

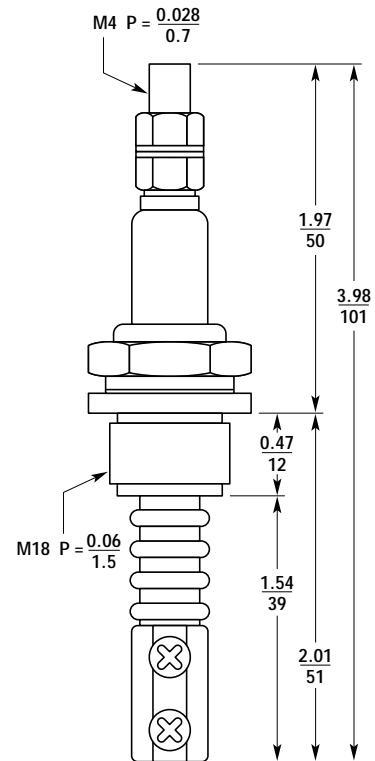
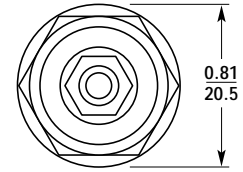
See the level and flow control engineering form located at www.automationproducts.com/6259 (or fax back #6259).

■ Special Designs



in.
mm

■ Individual Electrode



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STI
ELS-3

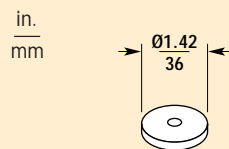
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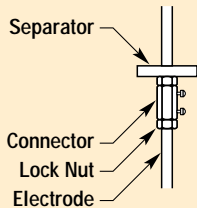
■ Separators

Note: When an electrode is extended 2000 mm, use a separator in order to prevent a short-circuit between electrodes.

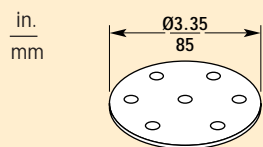
For One Electrode:



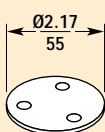
Flange type installation



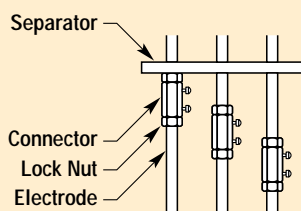
For Multiple Electrodes:



Thread type installation

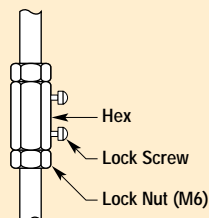


Flange type installation

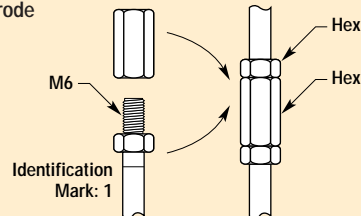


■ Identification of Electrode Types

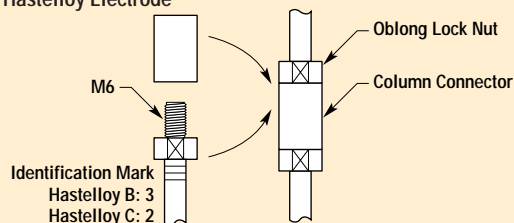
Stainless Steel Electrode



Titanium Electrode



Hastelloy Electrode



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■ Material Selection

Flange: Standard is PVC. Steel is optionally available for heat proof (max. 150°C) or pressure proof (max. 10 bar).

Electrodes: The electrode material can be selected according to liquids.

316SS: Water, Ammonia, Caustic soda, etc.

Hastelloy B: Hydrochloric acid, etc.

Hastelloy C: Low temp. Hydrochloric acid, Sulfuric acid, Alkali (high concentration Caustic soda).

Titanium: Sea water, high temperature and concentrated Nitric acid, Ferric chloride, etc.

Insulation Tube: The insulation tube on the electrode is optional when ordering.

Polyethylene: For general use. Up to 80°C.

Teflon-FEP: For highly corrosive liquids. Up to 150°C. (Contact factory to order.)

Housing: Standard is ABS (IP43). IP55 is optionally available by using the gasket to seal ventilations of the cover.

■ Ordering Information

Connection Size and Material

- (null) Standard JIS 10K4B, PVC flange
- G G2 mounting (option)
- S Option-Stainless Steel flange (150°C, 10 bar max.)
- 8 Custom

Electrode Material

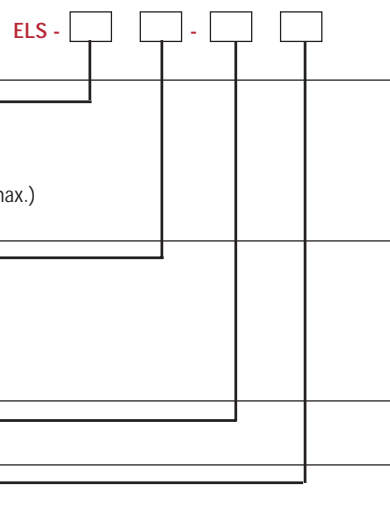
- 2 316SS
- 3B Hastelloy B
- 3C Hastelloy C
- 4 Titanium

Number of Electrodes

- 2-7 Specify number

Length of Electrodes (up to 2000 mm with cable)

- Specify number of 1m extensions



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