

# Electronic Level Switches

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## LX Series

- Universal High Level Switch
- Senses Oil/Water Interface
- Differentiates Foam from Liquids
- Can Detect Emulsion from Oil/Water
- Detects Difference of Air and Foam
- Able to Detect Solids in a Liquid
- Top Mounted Multiple Point Units
- Retractable Sensor Allows Adjustable Sense Point
- Tank Agitation Monitoring
- Tank Car Loading
- Redundant and Diversified High Level Switch
- Sanitary Construction Available on our SL Series

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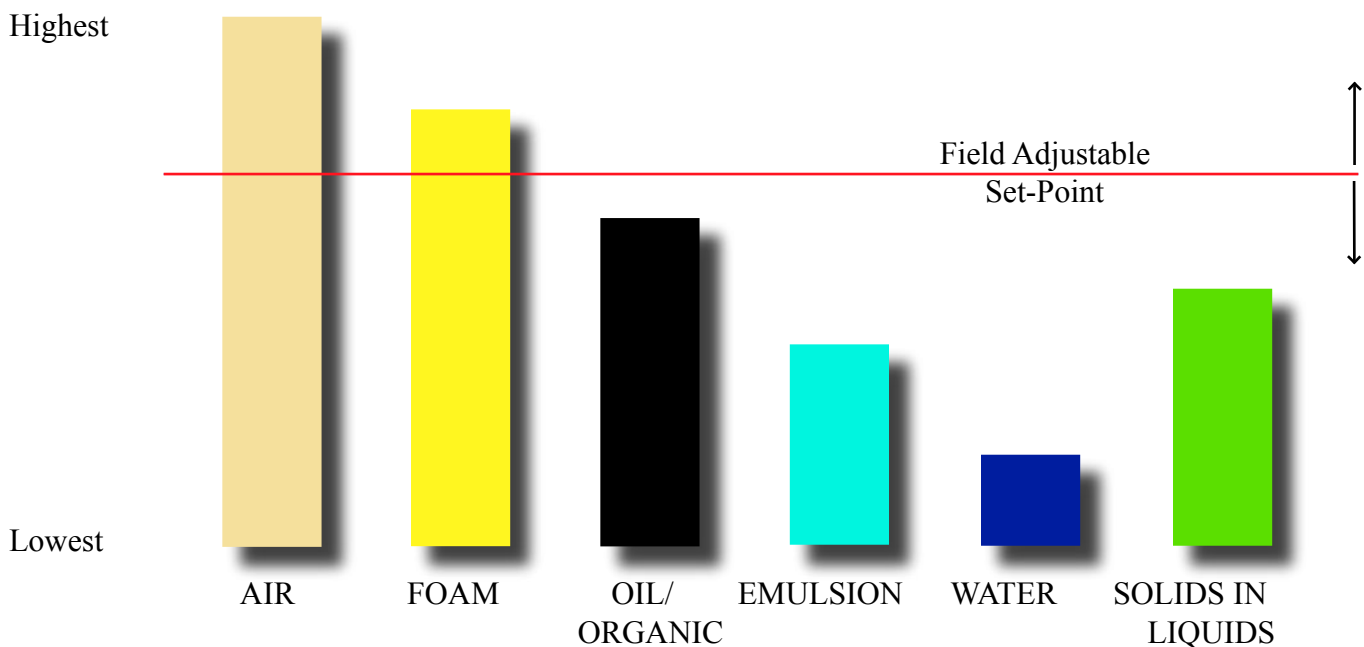
**Ameritrol, Inc.**  
**Instruments and Controls**

## Operation

The LX series level switch is the most versatile instrument ever designed for level control. One unit can be field calibrated to detect the interface of air/foam, foam/liquids, oil/emulsion, emulsion/water, oil/water, and a solid in a liquid. It can also be used as a universal high level switch that will alarm if any type of liquid comes in contact with the probe.

The sensor head employs two temperature sensors with a constant very low power heating source physically attached to one of the temperature sensors (see figure 1). The second temperature sensor is isolated from the heating source and provides compensation for changing process temperatures. The probe operates by sensing the thermal conductivity (not electrical conductivity) of the product surrounding the probe. All liquids that form an interface will have a difference in thermal conductivity that can be sensed. No moving parts assure reliable and repeatable operation in extremely viscous products.

### Sensor Output (Temperature Differential) Based on Product Type



The electronics are available with single or dual switch points. This allows one sensor to detect any two of the following process variables; level, agitation in the tank or vessel, and/or temperature of the product.

Relay outputs are standard and are offered with several different configurations and contact ratings. Remote mounting of the electronics is available.

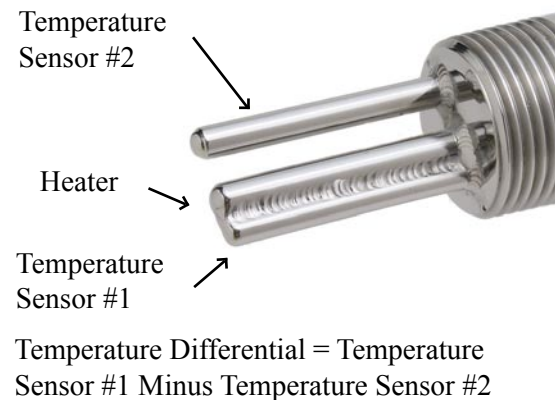


Figure 1

# Features

- Explosion Proof Enclosures
- Most Versatile Level Switch Available
- Threaded, Flanged, Retractable Probes
- Exotic Alloys for Corrosion Resistance
- Top, Side, or Bottom Mounting
- No Moving Parts
- 316L Stainless Steel Sensor
- Temperatures to 900F
- Pressures to 10,000 PSIG
- Field Programmable for Level, Agitation/Flow, and/or Temperature



Remote Mounted Electronics



Extended Sensor Head

Sensor Head	
Material of Construction:	316L Stainless Steel Standard
Operating Temperature:	Optional Exotic Alloys
	-50 to 350F (-46 to 177C) Standard
	Option -100 to 900F (-73 to 482C)
	Option -320 to 500F (-196 to 260C)
Operating Pressure:	Vacuum to 4000 PSIG (275 Bar)
	Option to 10,000 PSIG ( 689 Bar)
Response Time:	From 3 Seconds
Repeatability	+/- 1/8" at Sense Point
Process Connection:	3/4" MNPT, 1" MNPT
	Option Flanged, Retractable Probes, and 1-1/4", 1-1/2", 2", 3", 4" Threads
Probe Length:	1.8", 1.2"; Option Customer Specified

Electronics	
Housing:	Powder Coated Explosion Proof, UL/CSA Rated to Class 1, Div. 1 & 2, Group B,C,D; Class II, Div. 1 & 2, Group E,F,G; Div. III. FM Option
Temperature:	-50 to 150F (-46 to 65C)
Power Input:	90-135 VAC, 50/60 Hz, 4 Watts
	Option 24 VDC/VAC, 200-240VAC
Relay Output:	SPDT 3 Amps Resistive
	Option DPDT and 10 Amps Res.
Electrical Connection:	1" FNPT
Shipping Weight:	5 lbs

# PART NUMBER/ ORDER ENTRY SPECIFICATION

## LX SERIES LEVEL SWITCH

LX - 

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**PROCESS CONNECTION THREADED**

3/4" MNPT	0	7	5	0
1" MNPT	1	0	0	0
1-1/4" MNPT	1	2	5	0
1-1/2" MNPT	1	5	0	0
2" MNPT	2	0	0	0

**PROCESS CONNECTION FLANGED**

1" FLANGE	1	0
1-1/2" FLANGE	1	5
2" FLANGE	2	0
3" FLANGE	3	0
4" FLANGE	4	0
6" FLANGE	6	0

150# RATING	1
300# RATING	2
600# RATING	3
900# RATING	4
1500# RATING	5

RAISED FACE 316L SS	1
RAISED FACE CS	2
FLAT FACE 316L SS	3
FLAT FACE CS	4
SPECIAL	5

**OPTIONS - NO ENTRY REQUIRED FOR BOXES WITH X**

INSERTION LENGTH	
1.8" STANDARD	
1.2"	1 . 2
SPECIAL - SPECIFY LENGTH IN INCHES	
POWER INPUT	
117 VAC (90-132VAC)	
12 VDC (+30%, -10%)	
24 VDC or VAC (+/- 10%)	
200-240 VAC	
PROCESS TEMPERATURE	
-50F TO +350F	
-320F TO +500F	
-100F TO + 900F	
REMOTE ELECTRONICS	
CABLE TYPE PVC (200F)	
CABLE TYPE TEFLON (500F)	
CABLE LENGTH FEET	
RELAY OUTPUTS	
SPDT 3 AMP RESISTIVE	
SPDT 10 AMP RESISTIVE	
DPDT 3 AMP RESISTIVE	
DPDT 10 AMP RESISTIVE	

DUAL SWITCH POINTS	
SPDT 3 AMP RESISTIVE	
SPDT 10 AMP RESISTIVE	
EXOTIC ALLOYS	
HASTELLOY B-2	A B
HASTELLOY C-22	A C
HASTELLOY C-276	A D
MONEL	A M
TITANIUM	A T
CARPENTER 20	A P
HOUSINGS	
UL APPROVED EXPLOSION PROOF	
FM APPROVED EXPLOSION PROOF	
CENELEC APPROVED	
HIGH PRESSURE OPTION 10,000 PSIG	
RETRACTABLE PROBE 50 PSIG	
RETRACTABLE PROBE 500 PSIG	
STAINLESS STEEL TAG	

Example:LX-1000  
 LX Series level switch with 1" MNPT process connection, 1.8" insertion length, 117 VAC power input, -50 to 350 process temperature, single switch point with 3 amp contact rating.

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