

# Fisher® L2e Electric Level Controller

The rugged Fisher L2e electric on-off level controller uses a displacer type sensor to detect liquid level or the interface of two liquids of different specific gravities. This controller is ideal for controlling level in oil and gas separators, treaters, and scrubbers. The reliability of the L2e force balanced sensor design makes it well suited for applications in the oil and natural gas production, compression, and processing industries.

## Features

- **Repeatable Electric Level Control**—In conjunction with the Fisher easy-Drive™ electric actuator, a fully electric level control loop is tunable for a wide variety of applications (see figure 1).
- **Effective Level Loop Tuning**—Intuitive Zero and Span adjustments allow flexibility in setting loop performance over a level range of 5.0 to 559 mm (0.2 to 22 inches).
- **More Reliable Control**—Premium quality hermetically-sealed switch with gold contacts and advanced knife-edge sensing provide highly dependable and accurate liquid level control.
- **On-Line Field Support**—QR code on inside cover gives instrument technicians instant access to wiring, setup, calibration, tuning, and trouble-shooting.
- **Environmentally Responsible**—Replacing a conventional pneumatic level loop with fully electric level control eliminates controller and dump valve venting and requires less maintenance.
- **Consumes No Electrical Power**—Quality of design and components help ensure no leakage current.
- **Vibration Resistant Sensor Dynamics**—Controller performance and reliability does not degrade in high vibration installations, such as on compressor scrubbers.
- **Field-Configurable Vertical or Horizontal Displacer**—Displacer may be adjusted in the field for vertical or horizontal operation without additional parts.
- **Field Technician Friendly**—The sensor can be easily disassembled to inspect or replace process seals. The controller, with no repairable or replaceable parts, is easily replaced in the field.
- **NACE Service Ready**—Standard construction uses materials that comply with the requirements of NACE MR0175-2002.
- **CL1500 Pressure Rating**—Sensor assembly is designed and specified for ASME B16.34 CL1500 service when using a Polyvinylchloride (PVC) displacer. For PED (97/23/EC) maximum pressure is limited to 200 bar (2900 psig).



SCAN QR CODE\* FOR L2e AND  
easy-Drive ELECTRIC LEVEL LOOP  
FIELD SUPPORT

\* <http://www2.emersonprocess.com/en-US/brands/fisher/fieldsupport/l2e/Pages/L2e.aspx>



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## Specifications

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### Available Configurations

**Controller:** On/Off electric control action with intuitive Zero and Span Adjustments in SPDT dry contact configuration

**Sensor:** Displacer-type liquid level sensor for mounting to side of vessel

### Input

Type: Liquid level or liquid-to-liquid interface

Level Change Required for Full Change in State of Output: 5.0 to 559 mm (0.2 to 22 inches)

Vessel level differential gap (DG) is dependant on factors such as valve sizing, actuator speed, rate, liquid out flow, and vessel size. Contact your Emerson Process Management sales office for Fisher Electric Level Loop performance optimization

### Specific Gravity Limits

Minimum SG: 0.15

Maximum SG

*PVC Displacer:* 1.3

*SST Displacer:* 1.1

### Electrical Rating (Output)

■ easy-Drive actuator application: 7 mA@5 VDC

■ Other applications<sup>(1)</sup>: 1 amp resistive, 0.5 amp inductive/28 VDC

### Power Consumption

Switch consumes no power to operate, so it has no current leakage or voltage drop

### Sensor to Vessel Connection

2 NPT threaded or NPS 2 CL150 through 1500 slip-on flange connection

### Controller Connection

Electrical 1/2-14 NPT external conduit connection with 18 inches of 18 AWG lead wires, located at the bottom of the case

### Displacer Sizes

■ 48 X 305 mm, 541 cm<sup>3</sup> (1-7/8 X 12 inches, 33 in<sup>3</sup>)

■ 76 X 152 mm, 688 cm<sup>3</sup> (3 X 6 inches, 42 in<sup>3</sup>)

### Maximum Displacer Rod Length<sup>(2)</sup>, Horizontal or Vertical

1-7/8 x 12 Displacer with one 6-inch extension (optional use)

3 x 6 Displacer with one 3-inch extension (optional use)

### Displacer Material and Maximum Sensor Working Pressure<sup>(3)</sup>

**PVC Displacer:** Consistent with CL1500 pressure temperature ratings per ASME B16.34 up to maximum pressure of 258.5 bar (3750 psig)  
For PED (97/23/EC) maximum pressure limited to 200 bar (2900 psig)

**S31603 SST Displacer:** CL600 pressure temperature ratings per ASME B16.34 up to maximum pressure of 99.3 bar (1440 psig)

Note: For slip-on flange connection, maximum sensor working pressure must be consistent with the flange ratings

### Operative Ambient Temperature Limits<sup>(3)</sup>

Controller: -40 to 75°C (-40 to 167°F)

### Operative Process Temperature Limits<sup>(3)</sup>

Sensor:

■ PVC Displacer: -18 to 71°C (0 to 160°F)

■ S31603 SST Displacer: -40 to 204°C (-40 to 400°F)

### Construction Materials

**Controller:**

*Case and Cover:* Marine grade aluminum

*Switch:* Stainless steel

*Span Levers:* Stainless steel

*Springs:* Stainless steel

**Sensor:**

*Sensor Body:* LCC

*O-Rings:* Fluorocarbon

*Pivot Assembly:* Stainless steel

*Displacer:* ■ Polyvinylchloride (PVC) or ■ S31603 SST

*Sensor Spring:* Stainless steel

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-continued-

**Specifications (continued)**

**Hazardous Area Classifications Available**

Switch Only  
cCSAus  
Explosion-proof, Class I Division 1, Groups ABCD  
Dust Ignition-proof Class II Division 1, Groups EFG  
Dual Seal

**Canadian Registration (CRN)**

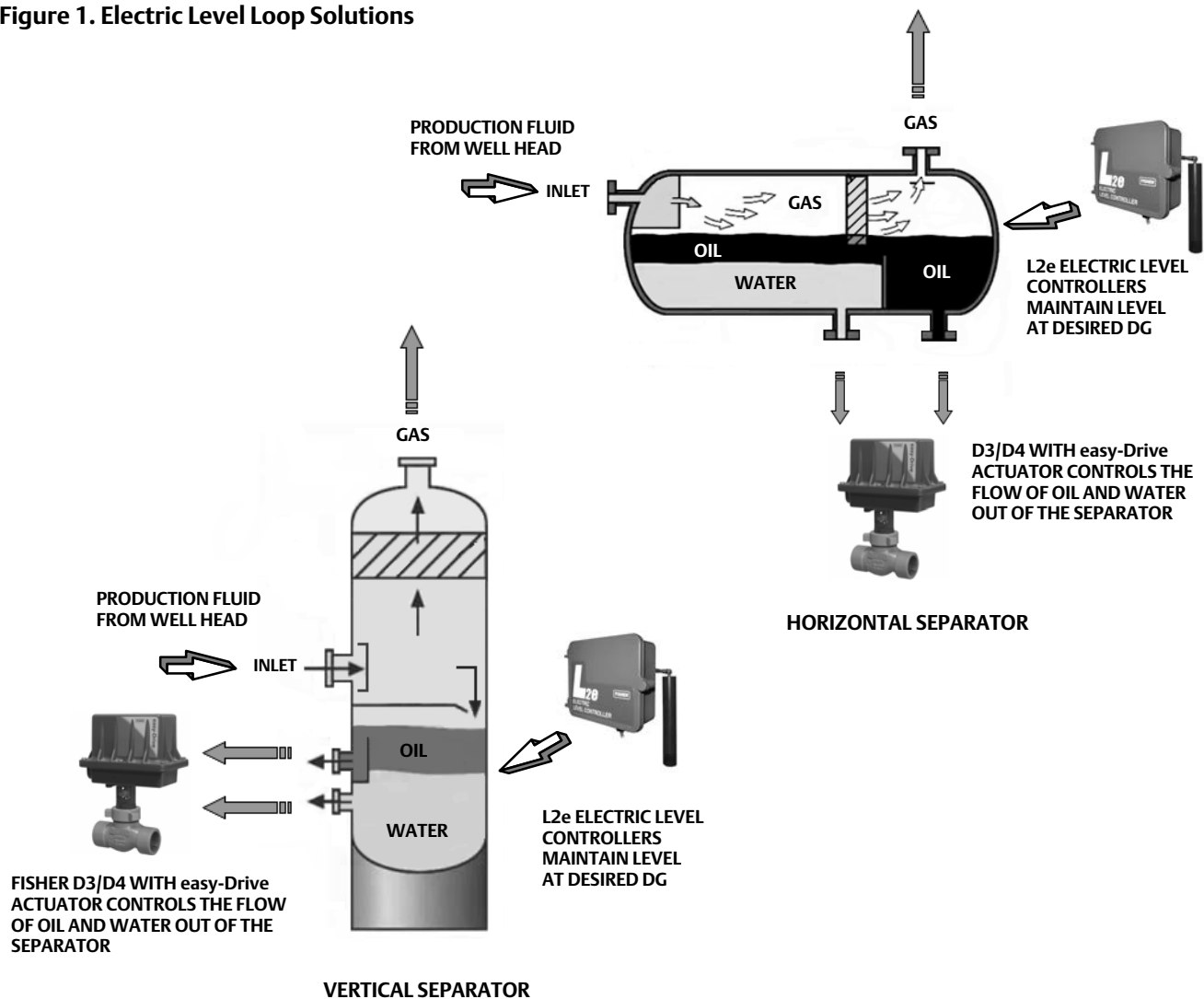
The L2e utilizes the same sensor unit pressure component as the L2 pneumatic controller version. Refer to L2 CRN which is deemed applicable to the L2e.

**Dimensions**

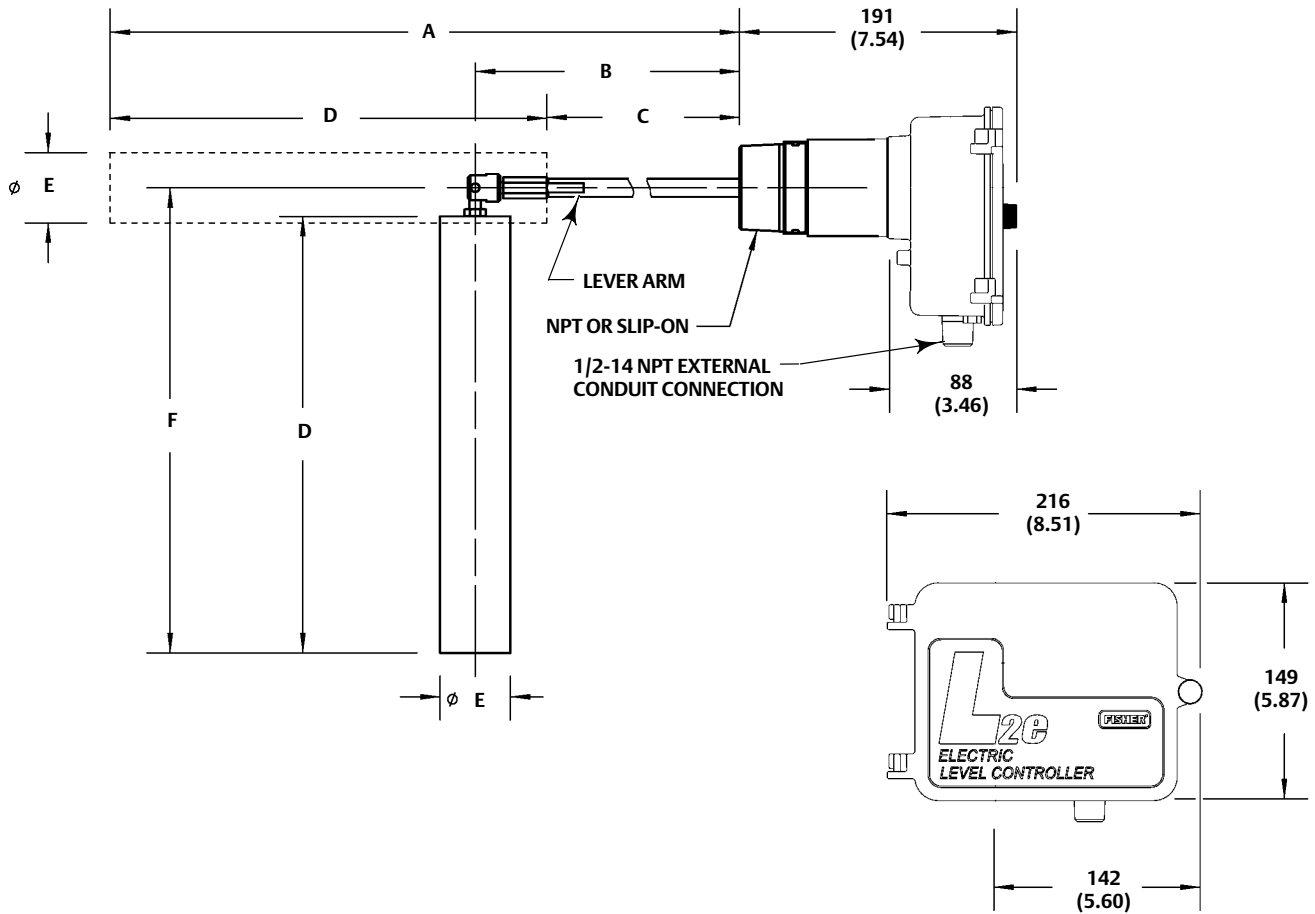
Refer to figure 2

NOTE: Specialized instrument terms are defined in ANSI/ISA Standard 51.1 - Process Instrument Terminology.  
1. Use with easy-Drive after first being used in other high power application is not recommended.  
2. Maximum span setting with 1 7/8 x 12 inch horizontal displacer plus 6 inch extension is not recommended due to potentially insufficient zero adjustment.  
3. The pressure and temperature limits in this document and any applicable code limitations should not be exceeded.

**Figure 1. Electric Level Loop Solutions**



**Figure 2. Dimensions**



| Sensor Configuration with Optional Extensions      | A             | B             | C           | D            | E           | F            |
|--|---------------|---------------|-------------|--------------|-------------|--------------|
|  | mm (Inch)     |               |             |              |             |              |
| 1-7/8 x 12 PVC Displacer with one 6-inch Extension | 589 (23.19)   | 335 (13.19)   | 287 (11.31) | 302 (11.88)  | 48 (1.88)   | 318 (12.50)  |
| 3 x 6 PVC Displacer with one 3-inch Extension      | 363.4 (14.31) | 258.7 (10.19) | 211 (8.31)  | 152.4 (6.00) | 76.2 (3.00) | 168.1 (6.62) |

mm  
(INCH)

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