

# 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 305 mm (0.2 to 12 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 OR CLICK THE QR CODE FOR  
L2e AND easy-Drive ELECTRIC  
LEVEL LOOP FIELD SUPPORT

## Specifications

### 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 305 mm (0.2 to 12 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 sales office](#) or Local Business Partner 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: 1 amp resistive, 0.5 amp inductive/28 VDC

Note: Use with easy-Drive after first being used in other high power application is not recommended.

### 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<sup>(1)</sup>

### 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

### 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

-continued-

**Specifications (continued)**

**Hazardous Area Classifications Available (continued)**

**Switch Only**

ATEX ⓈII 2 GD  
Flameproof Ex d IIC T6 (Ta=-40°C to +75°C)  
Dust Ex tb IIIC T85°C Db IP6X (Ta = -40° to +75°C)  
1 A Max

**IECEX**

Flameproof Ex d IIC T6 (Ta=-40°C to +75°C)  
Dust Ex tb IIIC T85°C Db IP6X (Ta = -40° to +75°C)  
1 A Max

**Other Classification/Certification Available**

**Switch Only**

CUTR—Customs Union Technical Regulations  
(Russia, Kazakhstan, Belarus, and Armenia)

**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

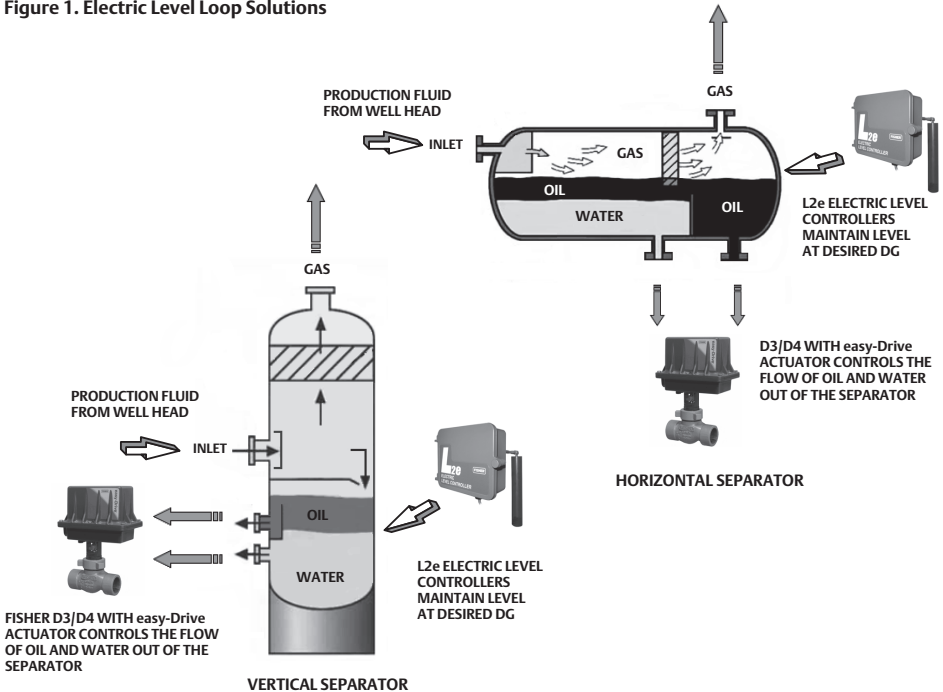
NOTE: Specialized instrument terms are defined in ANSI/ISA Standard 51.1 - Process Instrument Terminology.

1. Converting from a threaded NPT connection to a flange connection is to be done by the end-user. Refer to Converting a Threaded NPT Connection to a Flange Connection instruction Manual Supplement (D103277X012), available at [fisher.com](http://fisher.com) or from your Emerson sales office or Local Business Partner.

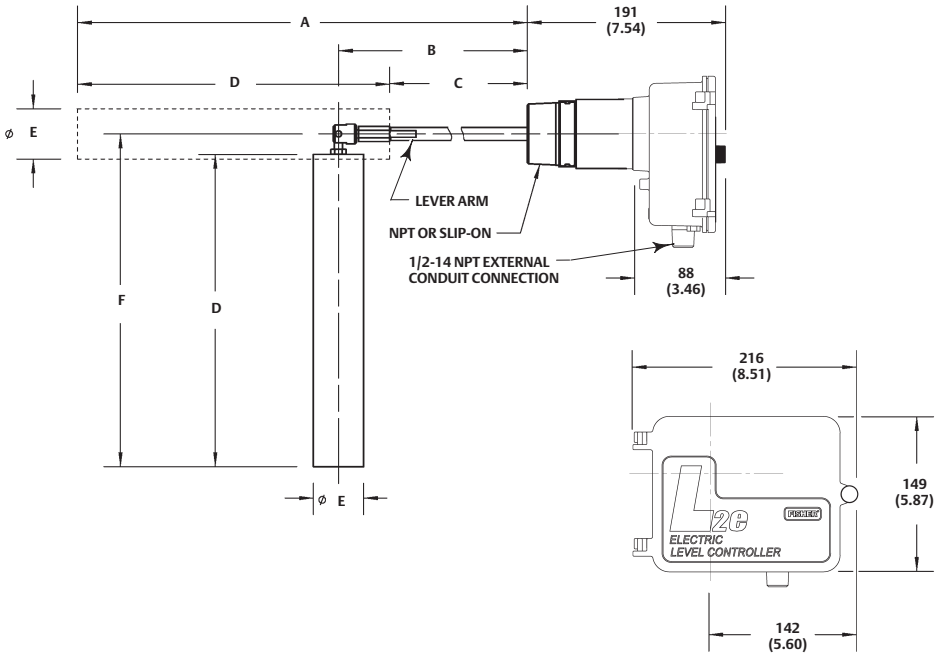
2. Maximum span setting with 1-7/8 x 1/2 inch horizontal displacer plus 6 inch extension is not recommended due to potentially insufficient zero adjustment.

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)

Neither Emerson, Emerson Automation Solutions, nor any of their affiliated entities assumes responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use, and maintenance of any product remains solely with the purchaser and end user.

Fisher and easy-Drive are marks owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. Emerson Automation Solutions, Emerson, and the Emerson logo are trademarks and service marks of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Automation Solutions  
Marshalltown, Iowa 50158 USA  
Sorocaba, 18087 Brazil  
Cernay, 68700 France  
Dubai, United Arab Emirates  
Singapore 128461 Singapore

[www.Fisher.com](http://www.Fisher.com)

