

Fisher™ FIELDVUE™ L2t Liquid Level Controller

The Fisher FIELDVUE L2t level controller is part of the rugged L2 series of liquid level controllers. It uses a displacer type sensor to detect liquid level or the interface of two liquids of different specific gravities. This controller is ideal for level on gas separators and scrubber applications. The L2t design is an environmentally conscious solution with zero emissions. Standard construction uses materials that comply with the requirements of NACE MR0175-2002

The device delivers a 4-20 mA output signal. The sensor uses a threaded 2 NPT or an NPS 2 CL150 through CL1500 slip-on flange connection to the vessel.



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FISHER L2t LIQUID LEVEL CONTROLLER

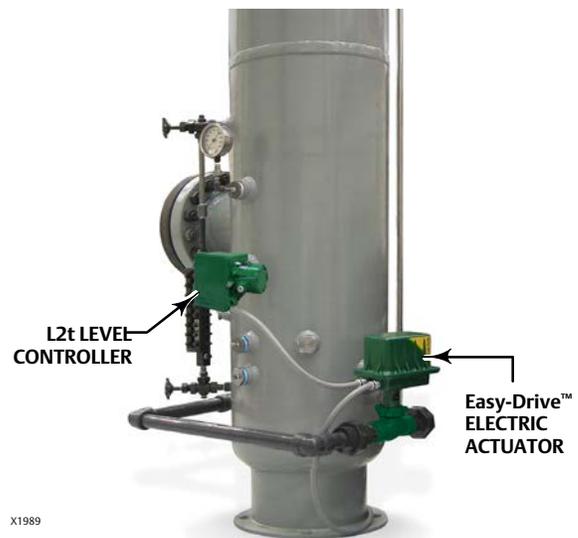
Features

- **Improved Reliability**
Moving to throttling control reduces equipment wear and creates smooth and continuous control by eliminating the full-stroke cycling associated with discrete control.

Use of the L2t reduces equipment inventory requirements as the level controller is adaptable for both throttling and on/off applications.

- **User-friendly Setup**
The L2t controller features simple push-button calibration and setup, with no tools required.

Field upgrades to the L2t require no mechanical changes to vessels equipped with standard 2 NPT connections.



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- **Environmentally Friendly**
This zero-emission solution exceeds regulatory requirements and mitigates environmental concerns when used with electric actuation.

Specifications - Housing and Sensor

Available Configuration

Sensor: Displacer-type liquid level sensor for mounting to side of tank. Displacer travel is transmitted to controller by pivotal movement of displacer rod

Input Signal

Type: Liquid level or liquid-to-liquid interface

Level change required for full change in output signal in a 1.0 specific gravity liquid with either vertical displacer with standard lever arm length

Default: 2.8 inches, user configurable if other range desired

Minimum Span Level Change
102 mm (4 Inches)⁽¹⁾

Maximum Span Level Change
305 mm (12 Inches)⁽¹⁾

Minimum Specific Gravity⁽²⁾

0.4

Output Signal

4-20 mA and two discrete switches

Reverse acting via configuration or calibration

Sensor to Vessel Connection

■ 2 NPT threaded or ■ NPS 2 CL150 through 1500 slip-on flange connection⁽³⁾

Controller Connection

Case Vent: 1/4 inch with vent screen assembly located on the back of the case

Displacer Size

■ 48 x 305 mm, 541 cm³ (1-7/8 x 12 inches, 33 in³) (Standard) or ■ 70 x 203 mm, 778 cm³ (2-3/4 x 8 inches, 47.5 in³) (Optional)

Maximum Displacer Insertion Length⁽⁴⁾

Standard lever arm length plus one 6-inch extension, horizontal or vertical

Displacer Material and Maximum Sensor Working Pressure⁽⁵⁾

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

Displacer Material and Sensor Temperature Limits⁽⁵⁾

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

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

Operative Ambient Temperature Limits⁽⁵⁾

Controller: -29 to 71°C (-20 to 160°F)

Construction Materials

Controller

Case and Cover: Aluminum

Sensor

Sensor Body: LCC

O-Rings: Fluorocarbon

Pivot Assembly: Stainless steel

Displacer: ■ Polyvinylchloride (PVC) or ■ S31603 SST

Spring: Stainless steel

Dimensions

Refer to figure 1

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

1. Any deviation from the standard construction described in the input signal specification above requires special displacer sizing considerations. Contact your [Emerson sales office](#) for information.

2. Minimum specific gravity values apply to both horizontal and vertical displacers with standard lever arm length (see dimension in figure 1).

3. 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 Emerson.com or from your Emerson sales office.

4. Standard lever arm length. See figure 1.

5. The pressure and temperature limits in this document and any applicable code limitations should not be exceeded.

Specifications - Transmitter

Input Signal Source

Hall Effect Sensor and magnet array

Transmitter Output Signal

Analog: 4 to 20 mA DC

High saturation: 20.5 mA

Low saturation: 3.8 mA

High alarm⁽¹⁾: > 21.0 mA

Low Alarm⁽¹⁾: < 3.6 mA

Digital - PENDING:

HART 1200 Baud Frequency Shift Keyed (FSK)

HART Version 7

HART impedance requirements must be met to enable communication. Total shunt impedance across the master device connections (excluding the master and transmitter impedance) must be between 230 and 600 ohms.

HART receive impedance:

Rx: 28.06k ohms

Cx: 5.84 nF

Output Current Limit: 30 mA DC maximum

Integral Limit Switch - PENDING

Two isolated solid state limit switches, configurable throughout the calibrated travel range or actuated from a device alert

Off State: 0 mA (nominal)

On State: up to 1 A

Supply Voltage: 24 - 30 VDC

Travel Limit Trip Points

Two

Recommended Power Supply

24 to 30 volts DC; 25 mA

Instrument has reverse polarity protection.

A minimum compliance voltage of 17.75 VDC (due to HART impedance requirement) is required to guarantee HART communication

Reference Accuracy

± 1% of output span. Includes combined effects of hysteresis, linearity, and deadband

Limit Switch: 2% of travel span

Repeatability

± 0.25% of span

Electromagnetic Compatibility

Meets EN61326-1:2013 and
EN61326-3-2:2008

General Electrical Safety - Environmental Conditions

Use: Indoor and Outdoor

Altitude: up to 2000 m

Temperature: -40°C to +80°C

Relative Humidity: 9.2 - 90%

Supply Voltage Fluctuations: N/A, not connected to Mains

Transient Overvoltage: Category I

Pollution Degree: 4

Wet Locations: Yes

Operating Ambient Temperature Limits

-40 to 80°C (-40 to 176°F)

Hazardous Area Approvals

cCSAus— Explosion-proof, Class I Div. 1, Class I Div. 2

Hazardous Area Approvals - PENDING

cCSAus— Intrinsically Safe, Dust Ignition-proof

ATEX— Intrinsically Safe, Flameproof, Type n, Dust by intrinsic safety

IECEX— Intrinsically Safe, Flameproof, Type n, Dust by intrinsic safety or by enclosure

Electrical Housing

cCSAus— Type 4X, IP66

Electrical Housing - PENDING

ATEX— IP66

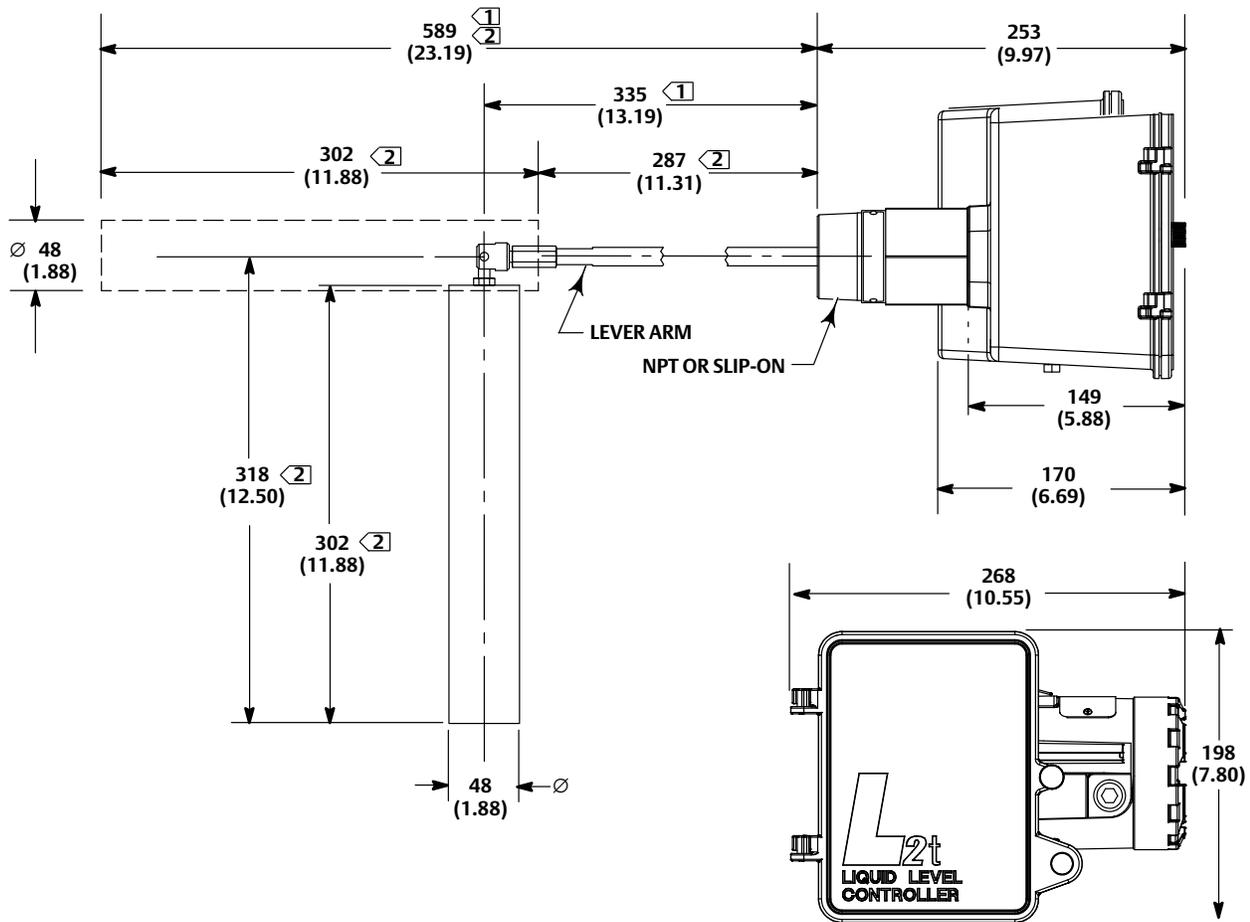
IECEX— IP66

Note: Specialized instrument terms are defined in ANSI/ISA Standard 51.1 - Process Instrument Terminology.
1. Only one High/Low alarm available in a given configuration. Alarms are NAMUR NE43 compliant.

Product Selection

Base Instrument Model	
L2t	Liquid Level Sensor
Displacer Material	
A	PVC Displacer
B	S31603 SST Displacer
Displacer Size	
A	48 x 305 mm, 541 cm ³ (1-7/8 x 12 inches, 33 in ³)
B	70 x 203 mm, 778 cm ³ (2-3/4 x 8 inches, 47.5 in ³) ⁽¹⁾
Sensor Connection	
A	Threaded 2 NPT
B	NPS 2 CL50 through 1500 slip-on flange connection
Hazardous Area Approval Agency/Location/Protection	
A	None: EMC compliance to CE, IEC 61010 and IEC 61000-4
B	cCSAus: Intrinsically Safe, Explosion-proof, Division 2, Dust Ignition-proof
C	IECEX: Intrinsically Safe, Flameproof, Type n, Dust by intrinsic safety or by enclosure (includes Certified Blanking Element) (Includes RCM mark for import into Australia & New Zealand)
D	ATEX: Intrinsically Safe, Flameproof, Type n, Dust by intrinsic safety
1. 70 x 203 mm (2-3/4 x 8 inches) is available in PVC only	

Figure 1. Dimensions



mm
(INCH)

Notes:

- ① Dimensions include one standard 152 mm (6-inch) extension. Contact your [Emerson sales office](#) for optional extension lengths.
- ② Dimensions valid with standard displacers only.

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Product Bulletin

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L2t Liquid Level Controller
D104744X012

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