



Level



Pressure



Flow



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Analysis

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Solutions

# FMP45 in (High Temperature/High Pressure) Displacer Replacer- Chemical

Levelflex M FMP45 is used to measure level in liquefied gas (Butane Diol)



High temperature process plant



Levelflex M FMP45 high temperature versions



Chemical plant

**The high temperature version of the TDR system Levelflex M FMP45 outperforms a displacer system in a Butane Diol (liquefied gas) level measurement.**

## Customer Profile

Major chemical company

## Application description

- product: Butane Diol (liquefied gas)
- process pressure:  
3916psi (270bar) operational  
714psi (325bar) max
- process temperature:  
266°F (130°C) operational  
464°F (240°C) max

## Instrument used

- FMP45 (high temperature version)
- separate housing
  - 4-20mA HART; 4-line display VU331

## Application challenges

The customer had displacer problems caused by buildup. This was due to the fact that powdery solid particles (catalyst) are entrapped within the Butane Diol. The customer wanted higher reliability and to reduce the maintenance issues.

## Measurement results

The solution was to use the Levelflex M FMP45. It was an easy replacement for the displacer because the existing bypass chamber could be used. The Levelflex M FMP45 provides a reliable signal and is not affected by build-up. The use of Levelflex was a cost-effective advantage because it saved money by eliminating the continuous maintenance that had to be done with the displacer system.

## Instrument description

- Temperature range: -328°F to +752°F (-200°C to +400°C)
- Pressure range: vacuum to 5800 psi (vacuum to 400 bar)
- Secondary safety compartment for gas-tight glass feed-through
- Rod and coax probes up to 13 ft (4 m), cable probes up to 115 ft (35 m) measuring range

## Measuring principle

The Levelflex is a “downward-looking” measuring system that functions according to the ToF method (ToF = Time of Flight). The distance from the reference point to the product surface is measured. High-frequency pulses are launched and guided down a metal cable/rod, which acts as a surface wave transmission line. The pulses are reflected by the product surface, received by the electronic evaluation unit and converted into level information. This method is also known as TDR (Time Domain Reflectometry).

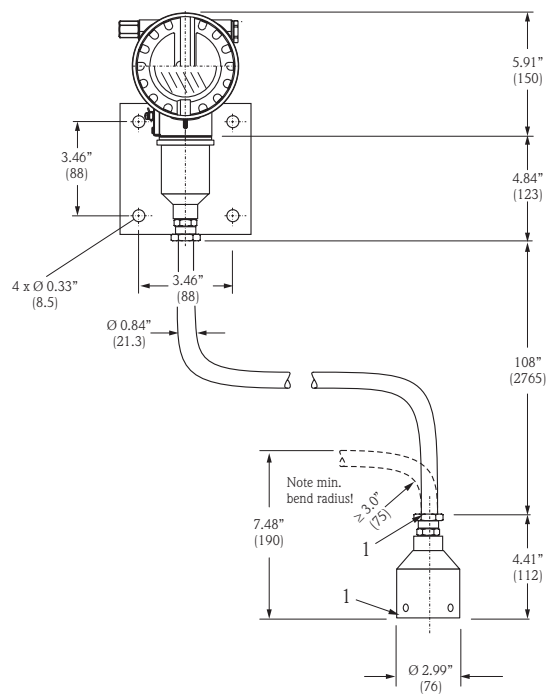
For more information, contact  
Endress+Hauser, Inc.  
317-535-7138  
[www.us.endress.com](http://www.us.endress.com)



Levelflex M FMP45 installed in a bypass of a high temperature / high pressure application. The separate housing is used for easy access to setup the instrument.



Close-up of temperature spacer



Remote housing diagram

ISO 9001:2000 Certified

#### USA

Endress+Hauser, Inc.  
2350 Endress Place  
Greenwood, IN 46143  
Tel. 317-535-7138  
Sales 888-ENDRESS  
Service 800-642-8737  
Fax 317-535-8498  
inquiry@us.endress.com  
www.us.endress.com

#### Canada

Endress+Hauser, Canada  
1075 Sutton Drive  
Burlington, ON L7L 5Z8  
Tel. 905-681-9292  
800-668-3199  
Fax 905-681-9444  
info@ca.endress.com  
www.ca.endress.com

#### Mexico

Endress+Hauser México, S.A. de C.V.  
Fernando Montes de Oca 21 Edificio A Piso 3  
Fracc. Industrial San Nicolas  
54030. Tlalnepantla de Baz  
Estado de Mexico, Mexico  
eh.mexico@mx.endress.com  
www.mx.endress