



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

# FMP41C Balance Tank Level Measurement with Guided Radar- Food

## Levelflex M FMP41C measures level of milk at dairy plant



Food industry



Levelflex M FMP41C



Fresh glass of milk

### Product information

Level measurement in milk and dairy products are often difficult due to foaming, rapid temperature changes and harsh CIP and washdown conditions. Hydrostatic level sensors are commonly used for these applications but will often suffer from damaged membranes and errors due to temperature effects.

One alternative is to use guided radar and the Endress+Hauser Levelflex FMP 41C has been developed to meet the needs of the dairy industry. It meets 3-A sanitary standards and is designed to survive wash-down conditions. Available in rod or cable version the guided radar is not affected by temperature changes, build-up or density changes.

### Customer Profile

A primary Dairy in Canada produces products such as milk and dairy, fruit-juices, cultured products, cheese and table spreads. The facility has staff of about 2900 employees.

### Application description

The FMP41C continuously measures the level of milk in a low level balance tank.

The tank is 20" (0.5m) high and the level control is critical to keep system running. If the level is too low, air may be sucked into the system. Too high a level results in costly overflows.

### Application challenges

Fast moving level changes and rapid temperature changes combined with density changes of different milk products and CIP fluids. At times foam forms inside the tank.

### Instrument used

Levelflex M FMP41C level transmitter including PFA rod probe with 2" Tri-Clamp process connection. Remote housing with 2 wire 4-20mA HART® electronics and display.  
Model No.: FMP41C-AMTLKB23A4A

### Instrument description

The Levelflex M is a top-mounted, continuous level transmitter for process or storage applications. Fluctuations in the density, temperature, or build-up do not influence the measurement. Communication protocols such as: HART®, Profibus® and FOUNDATION™ Fieldbus are available

### Measuring principle

The Levelflex operates with micro-impulse radar on the guided time-of-flight principle. High-frequency radar pulses are guided along a cable or rod probe. The pulses are reflected on the surface of the medium and the level is calculated from the time of flight of the pulses.

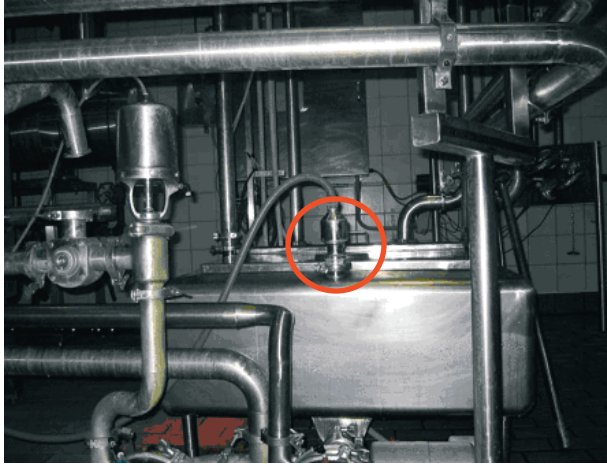
### Measurement results

The FMP41C delivers an absolutely stable and accurate value of the actual level in the balance tank. Reliability and repeatability has been excellent. The accurate measurement results in better control of the pasteurizer (HTST) without need for calibration or adjustments when changing products or after CIP.

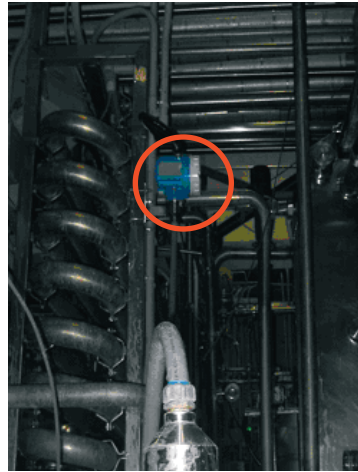
### Alternative application areas

The Levelflex is available for applications in tall solids silos for products such as flour, grain, sugar and other ingredients. Other application areas are filler bowls, vacuum vessels and aseptic tank level.

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



The remote sensor mounted inside a balance tank used in a milk pasteurizer



The transmitter with "remote sensor" version

#### 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

ISO 9001:2000 Certified