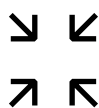


# The worlds fastest response times matter

Tub level, guided wave radar with instant output keeps fracking moving



01 Sand blending truck



## Introduction

Hydraulic fracturing, commonly known as “fracking,” is a process used in the oil and gas industry to extract hydrocarbons from underground rock formations. One crucial aspect of this process is the use of proppants, such as sand, to keep the fractures open and allow the hydrocarbons to flow to the surface. To transport this sand to the well site, specialized sand fracking trucks are utilized. These trucks are designed to move massive quantities of sand quickly and efficiently, using specialized equipment to load, transport, and unload the proppant material.

## Challenge

Level instrumentation is used to measure the level of sand being moved through these trucks. The sand running through this system presents a challenge as is often not uniform and can have a wide range of dielectric constants depending on moisture content. The readings from the instrumentation control the feed rate for the system. When moving massive amounts of sand during this operation, the outputs from the instrumentation must be accurate, fast, and capable of reading various dielectric constants of the material.

—  
02 LWT320 display waveform

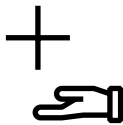
—  
03 Example of parallel ground for signal amplification

—  
04 LWT310 with coaxial probe style



## Rationalization

In applications where level changes happen rapidly, ensuring that radar technology has the best chance possible to detect it is crucial. This is especially true if the media has a low or changing dielectric constant. Parallel grounds are often used to artificially amplify signal returns for better level tracking. This return path helps to eliminate signal loss and distortion caused by external factors such as electrical noise, vibration, or low electrically conducting media. This can either be accomplished from the factory, using a coaxial probe, or be custom built in the field.



## The ABB Solution

ABBs guided wave radar meets the challenges of applications with fast moving levels utilizing our patented LevelExpert™ algorithm. The firmware coupled with excellence in installation, enables accurate readings even in changing dielectric constant environments. It also features the fastest output available on the market at 400ms / 0.4 seconds. However, rapid level changes can still prove troublesome if care is not given to installation.



—  
02



—  
03



—  
04

---

# Notes

---

ABB, Inc.  
Measurement & Analytics  
3400, rue Pierre-Ardouin Québec (Québec)  
G1P 0B2 Canada  
Tel: +1 418-877-2944  
1 800 858-3847 (North America)  
Email: CA-GWRsupport@abb.com  
**[www.abb.com/level](http://www.abb.com/level)**

---

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG. Copyright© 2023 ABB  
All rights reserved