

SITRANS LR460

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**Breakthrough
Performance
with Process
Intelligence**



SIEMENS

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Introduction

Features & Benefits

Installation

Process Intelligence

Field Proven

Conclusion

- **24GHz FMCW radar**
- **Continuous level measurement, solids**
 - Non contact
 - No influence by dust
 - No influence by filling (acoustic) noise
- **328 Foot range**
 - Extremely high Signal to Noise ratio
- **392 F process temperature**
- **Integral Easy Aimer**
- **Process Intelligence**
- **Infrared handheld programmer**
- **SIMATIC PDM configuration**



328 foot range – with a 4" horn!

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Introduction

Features & Benefits

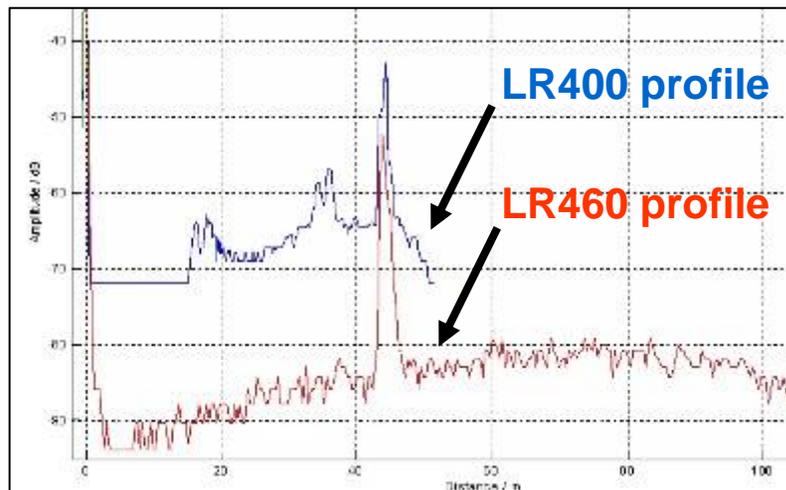
Installation

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Conclusion

- New High Frequency module
- Higher Signal to Noise ratio
- Competition need a 10" dish
- Performs in more difficult applications
 - Lower dielectric (dK) solids
 - Lower bulk density
 - Fewer signal dropouts
 - Smoother output signal



Installation considerations

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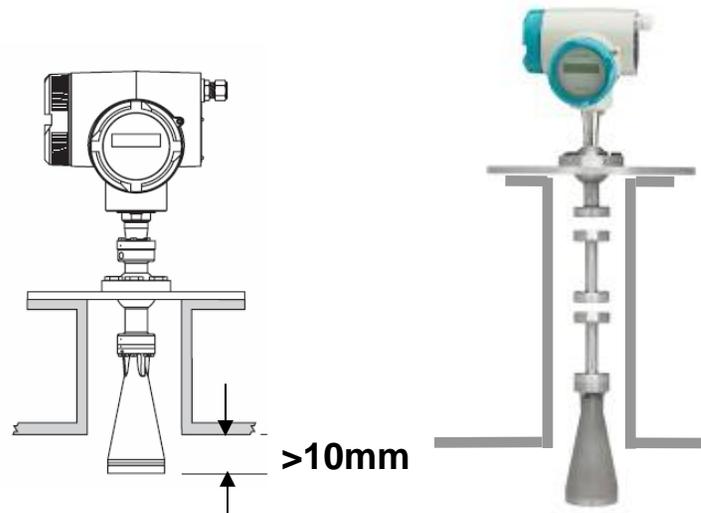
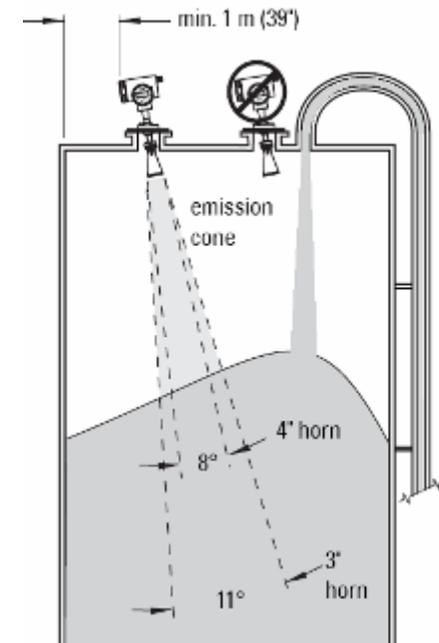
Process Intelligence

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Conclusion

Proper installation is key to successful performance.

- Integral Easy Aimer optimizes signal quality.
- Optional antenna extensions eliminate nozzle noise.
- Dust cover and purging options available for applications with clinging solids.



Easy Set-up

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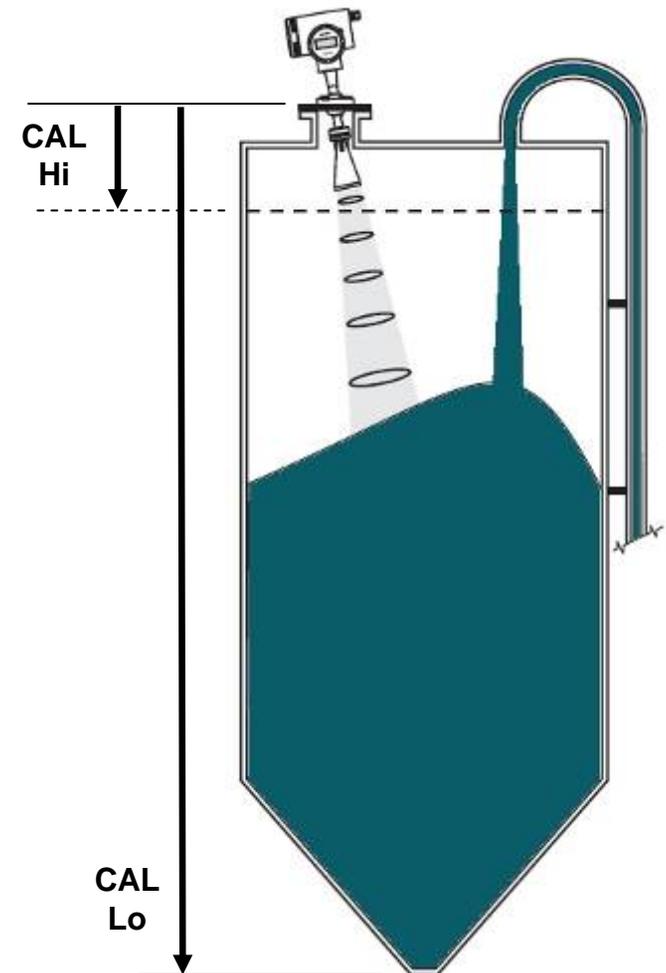
Process Intelligence

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Quick Start Wizard

- Set parameters with Handheld programmer or SIMATIC PDM
- Only eight parameters required
 - Language option
 - Application type
 - Operation
 - Units
 - High Calibration point
 - Low Calibration point
 - Response rate
 - Apply changes (yes or no)





Process Intelligence

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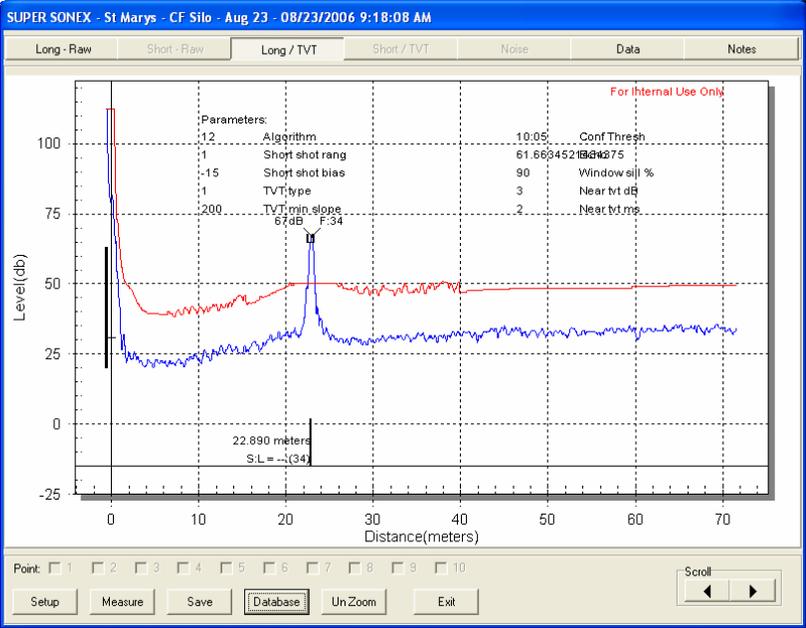
Process Intelligence

Field Proven

Conclusion



- Process Intelligence is an advanced toolbox of echo processing algorithms. The knowledge and experience from over 500 000 non-contacting level applications are built into Process Intelligence.
- Process Intelligence dynamically adapts to the application and changing process conditions to deliver the true target echo.
- Plug & Play performance!



Process Intelligence

Echo detection algorithms

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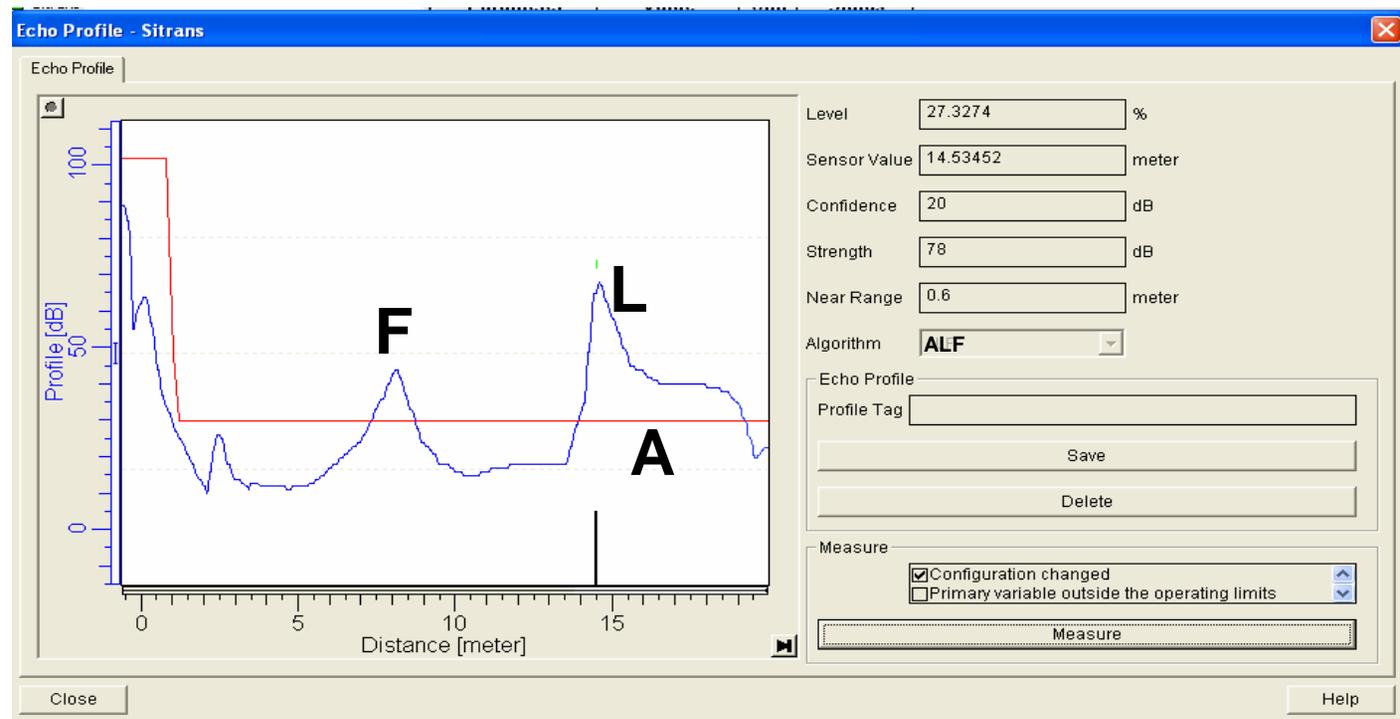
Process Intelligence

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Conclusion

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- Echoes are evaluated by A, L, and F components (Area, Largest and First).
- Proprietary, field proven formulae determine the correct echo based on experience with over 500,000 measurement points.
- Any combination of ALF components can be used depending on application requirements.



Process Intelligence

TVT threshold – auto sensitivity!

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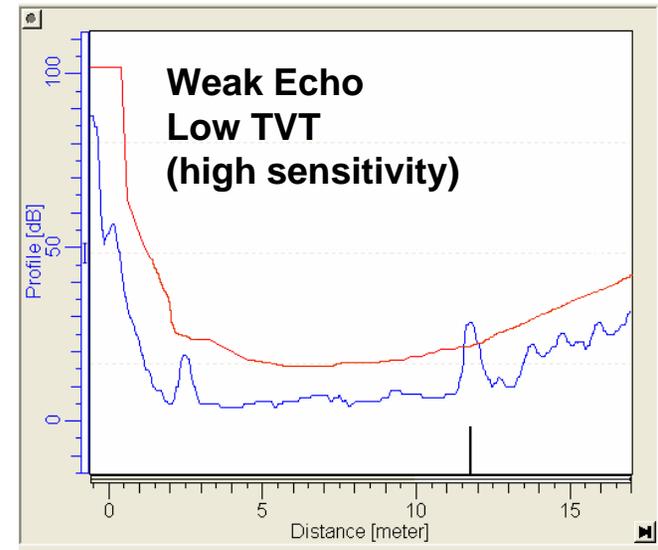
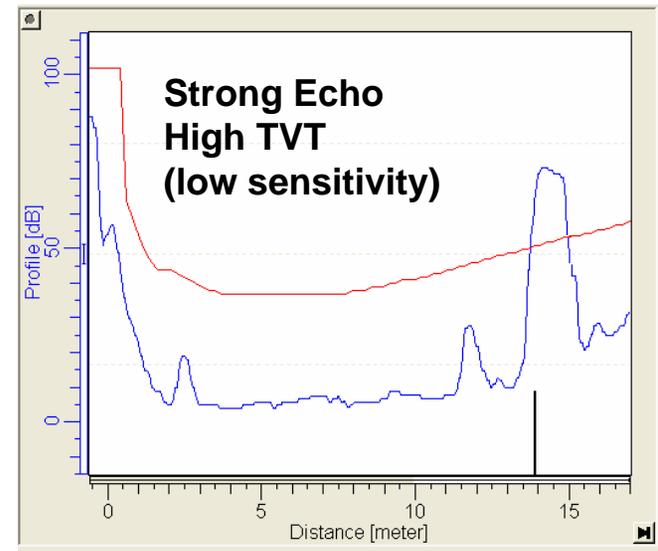
Installation

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Conclusion

- Unlike competitive thresholds, which are fixed, our TVT threshold is dynamic!
- TVT is placed at a % of largest echo amplitude.
- TVT automatically increases or decreases depending on echo strength (Auto sensitivity).
- When echoes are weak, TVT will be low (high sensitivity).
- When echoes are strong, TVT will be high (low sensitivity).
- Default is 50% for steel silo (30% for concrete silos).



Process Intelligence

Auto false-echo suppression

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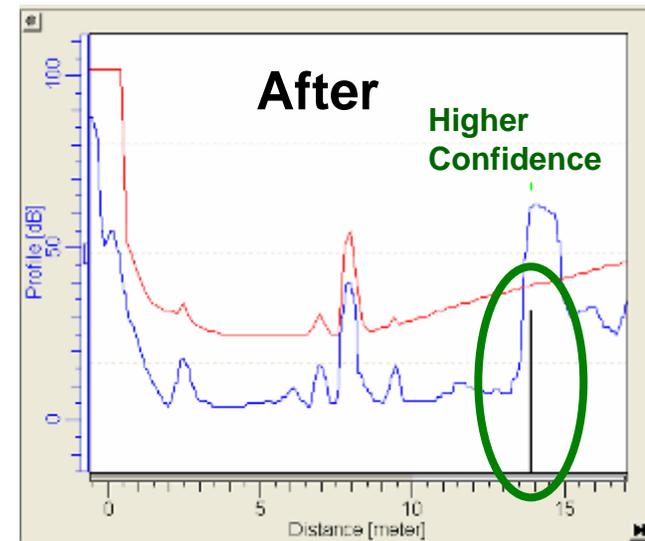
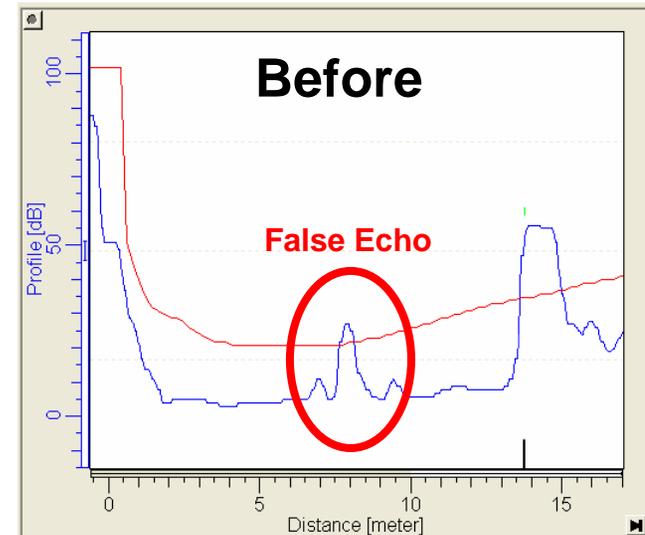
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- A false echo can be a silo seam, structural member, material build-up or any other obstruction. The false echo competes with the true echo and lowers the low echo confidence.
- With auto false-echo suppression, false echoes can be easily detected and ignored.
- Use the handheld programmer or SIMATIC PDM to initiate the LEARN function to the specified distance.
- The resulting echo confidence will be significantly higher.



Process Intelligence

Echo reform filtering

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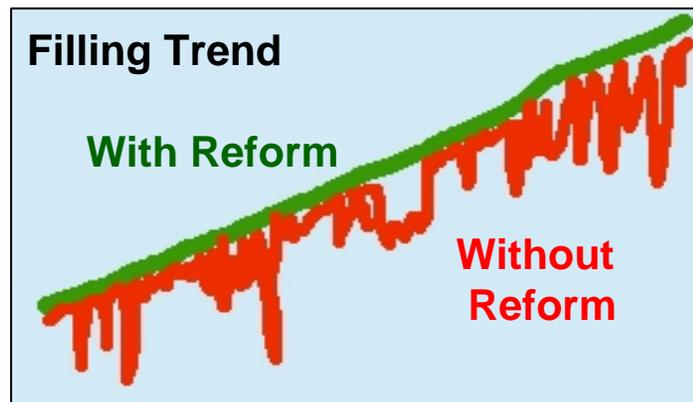
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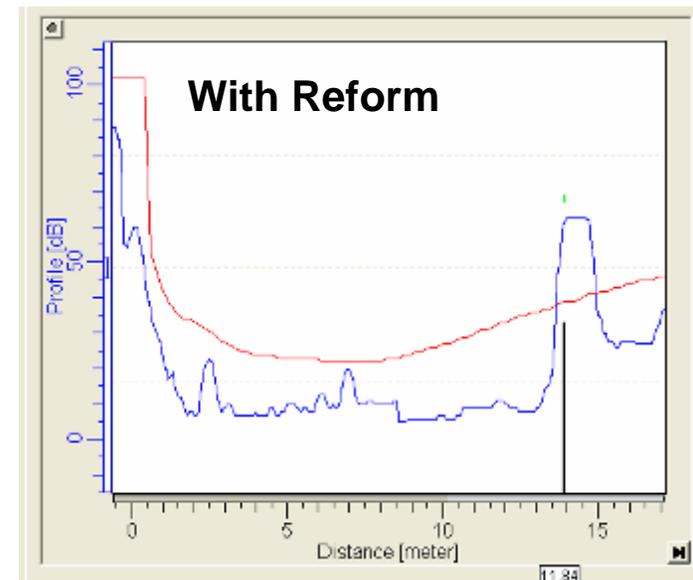
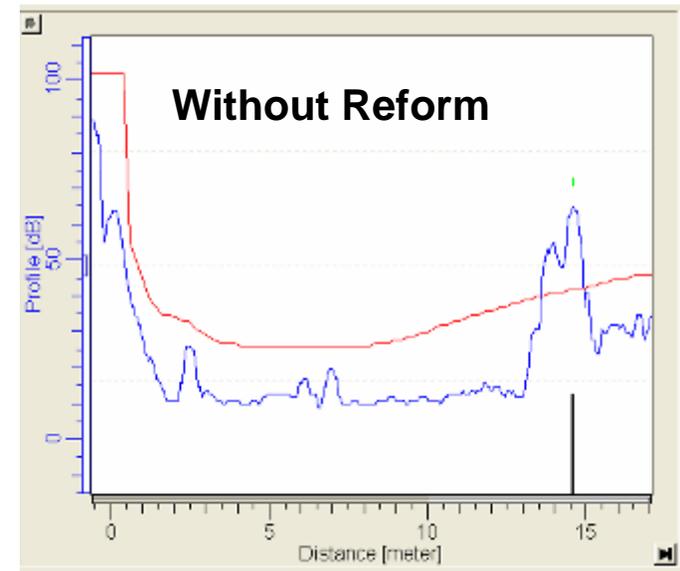
Field Proven

Conclusion

- Solids surfaces usually have a slope or multiple levels, causing split echoes.
- Without reform filtering, the level reading will drift significantly.



- Echo Reform joins echoes together, thus eliminating drift and providing a more accurate and reliable signal.



Field Proven

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Grain



Lime dust



Polymer powder



Asphalt

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- The LR460 works more often "out of the box" and has advanced echo parameters for difficult applications.
- Process Intelligence!
- Works where others cannot!
- Superior performance with a 4" (100mm) horn antenna.
- Siemens is world leader in non-contacting solids measurement.



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