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Hopper Evacuation Monitoring, Trending & Troubleshooting

State-of-the-art SmartAsh technology prevents high-hopper ash levels that could compromise system performance or damage essential ESP or baghouse equipment.

Overview Screen (Pressure System)

New SmartAsh 7.0 software offers accurate, real-time monitoring and detection of hopper ash levels. The software, based on proprietary algorithms from Neundorfer, also initiates alarms before a high-hopper ash problem develops that could compromise system performance or damage critical precipitator or baghouse equipment. Operational improvements typically result, including:

- Reduced load restrictions
- Reduced opacity excursions
- Optimized ash pulling, allowing for increased system capacity or reduced energy consumption

The patented Neundorfer SmartAsh 7.0 technology automatically monitors, trends and troubleshoots ash flow and collection in real time to optimize hopper evacuation sequencing in electrostatic precipitators or baghouses—improving ash handling system performance while reducing operating costs, maintenance and downtime.

SmartAsh Advantages

Compared to conventional, simplistic high-hopper level detectors, SmartAsh software provides:

- Lower installation cost
- Reduced operational cost, maintenance and downtime
- Detection of potentially high hoppers before they occur
- Reduced wear and tear on hopper evacuation systems
- Streamlined troubleshooting needed for corrective action
- Tabular and 3D graphical views of ash collected and emptied for each hopper. Restructured data format for faster access
- Intuitive navigation
- Simple software upgrades with minimal disruption of plant operations

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Navigation through the SmartAsh software functions is intuitive, beginning with an overview screen customized by Neundorfer to each specific plant's configuration. Specifically:

- Mouseover capabilities on each hopper show the essential stages of hopper evacuation including details on filling and emptying as well as pressurizing and equalizing for pressure systems

- Realistic, color-coded graphics provide monitoring detail for hoppers, pressure system feeders, transport and feeder pressure, emptying and filling cycles, valves and other components

- Pop-up alarms are always visible on screen, with easy access to a log of both current and past alarms for historic evaluation of ash evacuation
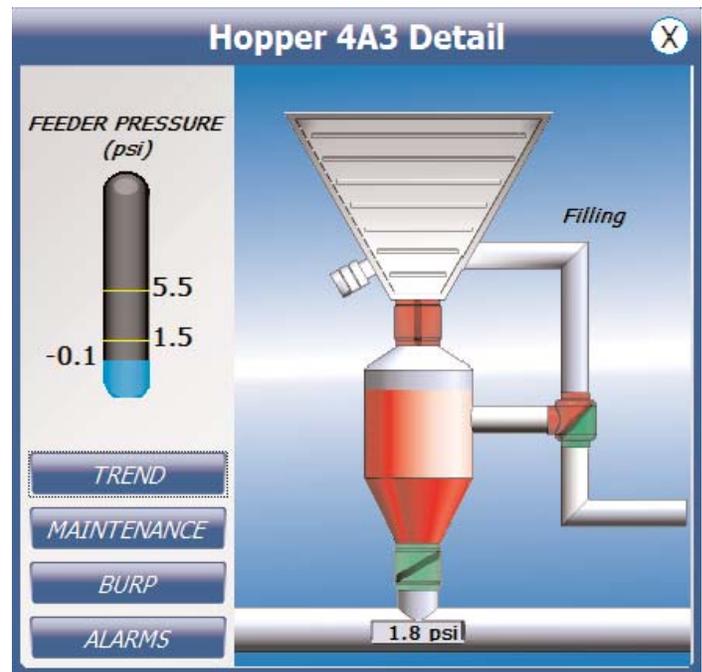
Hopper Detail (Pressure System)
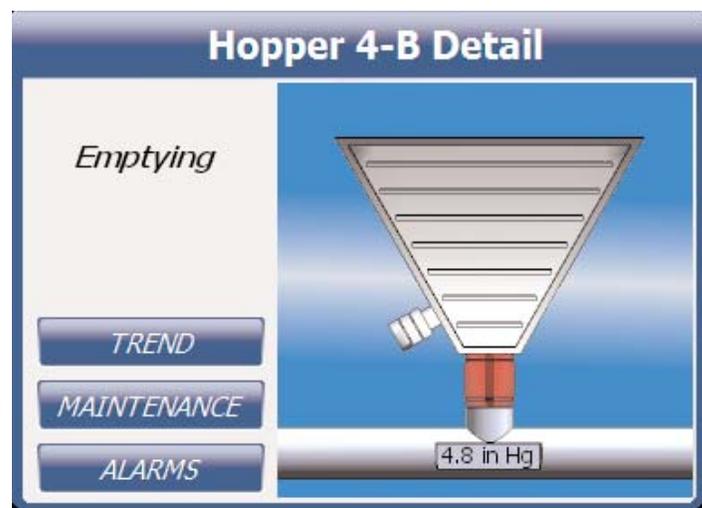
Pop-up Alarm

Hopper Detail (Vacuum System)

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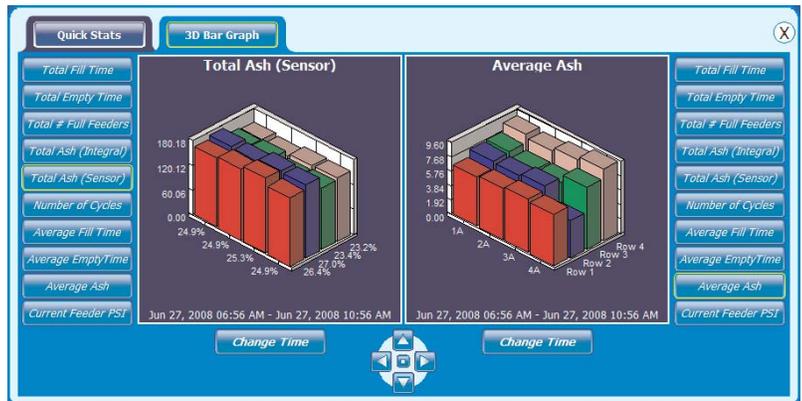
SmartAsh 7.0 software communicates with a programmable logic control (PLC) or distributed control system (DCS) to monitor and graphically display ash flow and collection and to optimize hopper sequencing—avoiding high hoppers, improving electrostatic precipitator or baghouse equipment utilization and reducing operating costs. The SmartAsh system identifies hopper component failures in addition to trending and displaying hopper performance, gas flow distribution and air pollution system conditions.

- 3D bar graph depicts all data available for each hopper with parameters and timeframes that can be adjusted before or after load changes, outages, rapping program changes or anytime—powerful tools for identifying ash distribution problems

- "Quick Stats" screens provide a tabular, numerical view of operating data for each hopper

With all these powerful tools, SmartAsh technology provides fully integrated troubleshooting capabilities for optimized hopper evacuation performance.

Bar Graph

Quick Stats Screen

Specifications for SmartAsh 7.0 Controls

- Communications: RS232/485, Ethernet, AB DH+, OPC, etc.
- POS-to-PLC Interface: Allen Bradley, GE, Modicon, others
- POS-to-DCS Interface: Westinghouse, Bailey, Foxboro, others
- Compatible with all ash system OEMs including UCC, ASH, others
- Works with vacuum or pressure hopper evacuation systems
- Available as a standalone module or with Neundorfer POS 7.0 for total precipitator monitoring

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