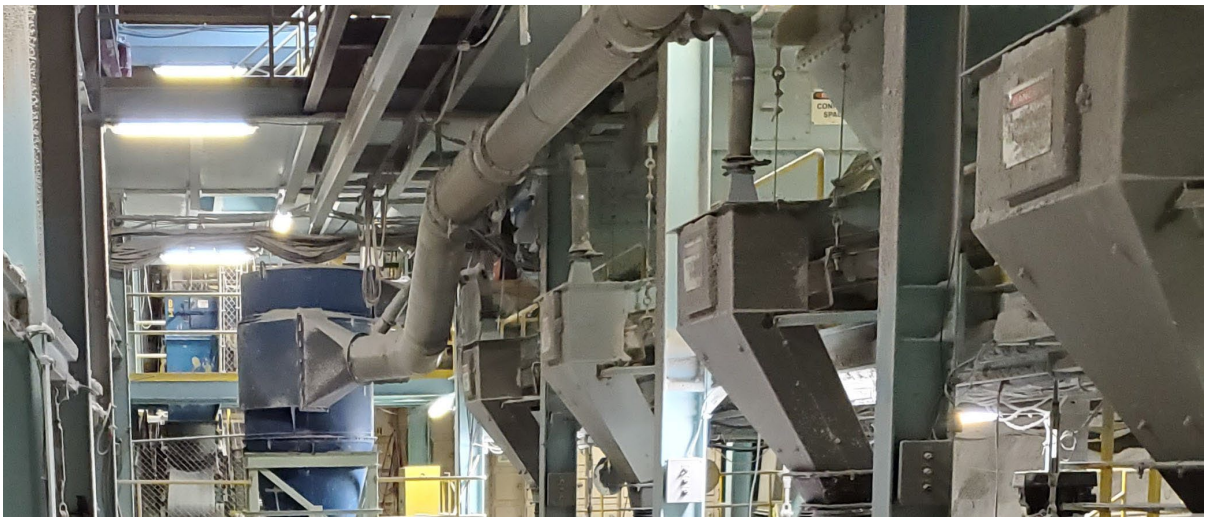
Why Remote Monitoring of Variable Frequency Drives aligns so well with Smart Mining objectives

Large medium-voltage (MV) motors are the indispensable “workhorses” of the mining industry, powering critical equipment in exceptionally demanding environments. Most of these motors are controlled by variable Frequency drives (VFDs), and with the addition of continuous remote monitoring, smart mining initiatives transform these drives into intelligent sensors. In large-scale operations—where MV drives run massive crushers, conveyors, and ventilation fans—this real-time data flow maximizes uptime and energy efficiency while significantly reducing the need for hazardous manual inspections.



Throughout the mining lifecycle, VFDs serve as one of the most widely deployed control technologies, ensuring reliable material handling and optimized energy usage. Keeping many of these drives running 24/7 is critical to production, but standard monitoring and maintenance procedures are often inefficient, costly, and ineffective.

Continuous remote monitoring of VFDs dramatically improves drive uptime, provides insight into local environmental and operating conditions, and aligns perfectly with Smart Mining objectives.

- **Enhanced Predictive Maintenance**. IoT sensors embedded in VFDs and their associated analytics help forecast equipment failures before they occur, reducing downtime and extending asset life. This keeps operations running smoothly and prevents major disruptions.
- **Lower Operational Costs.** Remote drive monitoring reduces labor-intensive manual readings and avoids reactive/unnecessary drive shutdowns. This leads to significantly lower operating expenses and higher ROI.

- **Higher Productivity & Efficiency.** With more data and smart analytics, mines operate more continuously and with fewer delays, increasing throughput.
- **Improved Safety Through Automation.** Remote monitoring of MV drives reduces the number of workers in hazardous zones. Real-time data improves response times and minimizes safety risks.

When it comes to MV VFD monitoring, the most comprehensive system available today is DriveScan. It is the only product available that has been designed specifically for remote VFD monitoring.

Hardware & Data Capture

- **High-Speed, Synchronized Sensors:** Records data across a wide sample rate (1 Hz to 4MHz) with 1% to ±0.01% accuracy
- **Optically Isolated Measurements:** Features patented technology for individual cell MV DC magnitude and ripple.
- **Drive Health Parameters:** Tracks power quality, input/output voltage and current draw, low voltage power supply status, and environmental conditions.

Analytics & Connectivity

- **Reliable Transmission:** Uses secure cellular or WAN networks for seamless data transfer.
- **Intuitive Software:** Provides a sophisticated, user-friendly cloud platform to organize, visualize, and analyze all your synchronized drive data.

Expert Support

- **Optional Monitoring:** Leverage optional, 24/7 health monitoring and analysis provided directly by EMA, a leading authority in drive service and troubleshooting

Integrating DriveScan remote monitoring with VFDs enables proactive equipment maintenance and substantial cost savings. By continuously tracking both internal drive health and external operating conditions, this smart technology prevents unplanned outages, improves worker safety, and boosts overall mining productivity.

If you are interested in discovering the full and detailed extent of DriveScan's alignment with Smart Mining objectives, please reach out to arrange a remote or in-person demonstration.

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