

ENGINEERING
TOMORROW

Danfoss

Product Brochure

Airflex® Slip Detection **Control**

VICKERS
by Danfoss



Slip detection control **reduces downtime and maintenance costs** caused by excessive slip

Danfoss, a world leader in clutch-based drive trains for grinding mills, continues to improve drivetrain stability, performance, and safety with Airflex® Slip Detection Control. This easy-to-use solution helps prevent damage to critical, high-value driveline components due to excessive slip.

Slip Detection Control is designed to monitor clutch performance and mitigate the risk of clutch overheating. The control system continuously monitors clutch slip during start up and operation, warning the operator when excessive slip occurs. Excessive slip leads to higher friction wear, overheating of the clutch, and increases the risk of fires in the drivetrain.

Features

- Continuously monitors clutch slip during mill operation
- Detects fast and long starts
- Start is aborted if excessive slip time occurs
- Slip is observed when the RPM of the input and output shaft are not equal

Benefits

- Reduces damage to motor, clutch, and drive train components
- Increases uptime
- Reduction in maintenance costs due to reduced friction and overheating of components

Slip detection control: **Startup function**

Detects fast starts

- A fast start occurs if the grinding mill engages ahead of the preset engagement time
- System response: Warning alert to operator
- Without monitoring and alert, fast starts may lead to catastrophic drivetrain component damage

Detects long starts

- A long start occurs if the grinding mill start time exceeds the preset engagement time to full RPM
- System response: The start is aborted and the clutch instantaneously disengages
- Without monitoring and disengagement, long starts may cause excessive wear, overheating and fires – Damages could exceed \$100k, plus additional fines and downtime

Slip detection control: **During operation**

Constant and continuous slip monitoring

- Slip detection system continuously monitors the clutch for excessive slip throughout operation – slip differential is a user preset value and can be adjusted for optimization
- System response: If excessive slip occurs, the clutch automatically disengages
- Disengaging the drive system when excessive slip occur during operation prevents excessive friction wear, costly drivetrain component damage, downtime, and overheating





Airflex has been a leader in clutch technology for over 40 years, optimizing grinding mill systems to ensure peak performance.



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