

# VARIABLE SPEED DRIVES

Precise Conveyor Control

Excellent Starting Characteristics

Continuous Low Speed Operation

Water Cooled for Underground Applications

Excellent Tripper Drive Performance

No Hydraulics to Maintain

No Mechanical Components to Wear

Highly Efficient Drive

Australian Conveyor Engineering manufactures variable speed drive systems for both underground and surface conveyors.

These can be supplied as separate belt starters or combined substation-starters. Drive systems are conservatively sized to ensure efficient operation over the complete operational range of the conveyor.

Variable speed drives are the most efficient drive system for conveyors, with efficiencies of 97.5%.

Variable speed drives for underground use are water-cooled to ensure proper removal of heat from the drives without compromising the integrity of the enclosure. A separate cooling system remote from the starter dissipates the heat ensuring quiet operation at the conveyor starter.

The variable speed drive system gives perfect starting of the conveyor independent of load. The conveyor can also be operated continuously at low speed without the thermal limitations associated with CST drives. This makes it ideal for long tripper based conveyors, as the start time for the conveyor can be extended to meet the system requirements.

A VSD drive system also gives the ability to provide controlled deceleration of a conveyor to ensure dynamic tensions in the conveyor remain at appropriate levels. The braking of the conveyor utilizes the variable speed drive to regenerate the braking energy for dissipation as heat in a water cooled circuit. The drive then applies braking torque to generate an S-curve deceleration of the conveyor. The actual deceleration profile and braking torque can be adjusted according to the conveyor profile braking requirements.



## TECHNICAL DETAILS

### VSD system specifications:

Drive module power	500kW continuous
Starting torque	>150% full load torque
Operating voltage	690V 50Hz
Start time	Fully adjustable
Load share	<1% error

### Cooling system comprising:

- 3kW cooling pump
- 5.5kW cooling fan and radiator assembly
- Connections to the cooling module are with quick-connect fasteners