

Hot Mill Table Roll AC Drive System

Avtron Mfg., Inc.

Application
Bulletin 340

Applications

Holding (Delay) Tables
Runout Tables



Benefits

- Improve profits with higher productivity, better surface quality and reduced costs
- Eliminate unplanned mill outages – keep entire table sections running even with loss of drive or motor
- Upgrade during shorter normal outages – saves time and cuts costs
- On-the-fly drive maintenance with individual drive disconnects – keeps mill running
- Maintenance savings: no motor rebuilding (commutator/brush or remagnetizing) complete diagnostics for drives
- Cost effective replaceable motor/gearbox
- Superior speed matching with easy auto tuning
- Eliminate individual tachs per motor with encoderless design
- Save energy – common bus with regenerative power supply
- No need for dynamic braking resistors

Main System Components



ADDvantage-32™ Regenerative SCR Bus Supply

- State-of-the-Art, Field Proven, Fully Digital
- Easy, Menu Driven in English and Actual Engineering Units
- 16 Event Fault FIFO, Faults in English not Code
- Diagnostics with Four Channel Built in Signal Analyzer
- Regenerative



AC Inverter Motor

- Totally Enclosed Fan Cooled
- Rugged Construction AC Induction Motor
- Class F and Class H Insulation Material Construction
- Turn-to-Turn and Phase-to-Phase High Voltage Spike Protection



Model 2400 Flux Vector AC Drive

- Fully Digital
- Encoderless High Performance
- Menu Driven English Setup and Diagnostics
- Self Tuning
- Constant Torque



AC Drive Applications

Case History

This common bus system (half of the system shown at right) replaced 34 DC motors and two DC drives at a mid central hot strip mill. Engineered by Avtron, it consisted of two (2) DC regenerative charging units, 34 Avtron encoderless flux vector AC drives, AC inverter duty motors, gearboxes and transformers – multiple sections were phased in during normal scheduled outages.

Old System

Rolls Driven by DC Motors and Drives.

New System

Avtron Open Loop Flux Vector AC Drive, Common DC Bus Supply Using Avtron ADDvantage-32™ Regenerative SCR Drives, Inverter Duty Motors, Gearboxes and Transformers.

Improvement Results

- Reduced motor maintenance time and cost.
- Unscheduled downtime savings through predictive failure information.
- Improved quality to the Crop Shear.
- Energy efficiency through Common Bus design.
- No susceptibility to motor demagnetizing.
- Faster start-up through Auto commissioning features.
- Save troubleshooting time through diagnostic status data.
- Minimized spares by using low cost component designs.
- Total system responsibility of all components by one supplier.
- All major components are made in the U.S.A.
- Support is only One Phone Call to our 24 Hour Hot Line.

Call Avtron at (216) 642-1230 to schedule an on-site engineering feasibility study to outline overall project costs and commissioning details.



Pictured is the Systems Plant, one of three Avtron plant locations in the Cleveland area.



This Avtron system minimized hardware and installation costs while supplying full regeneration to the AC line.

Metals Experience

Providing New AC and DC Digital Drives, Motor Generator Digital Regulators and Analog Upgrades to Digital Front Ends.

- Vessel tilts and skip hoists
- Slab and continuous casters
- Hot strip mills
- Cold rolling mills
- Annealing/pickling lines
- Galvanizing lines
- Tension leveling lines
- Paint lines
- Slitters/rewinders
- Roll grinders
- Wire drawing
- Rod and bar mills
- Ore bridges
- Mine hoists
- Conveyors
- Crop shears
- Cut-to-length systems
- Conduit lines
- Payoff/tension reels
- Accumulators
- AC holding and runout table drives
(DC to AC conversions)

Specifications subject to change without notice.
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