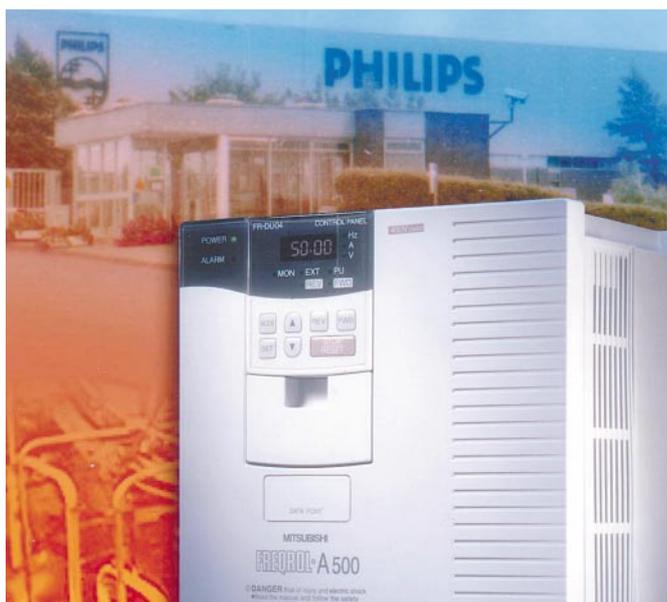


Industry: Materials Handling

Products Used: Drives

# Load sharing keeps conveyors running smoothly

Philips Components in Durham has worked with Mobile Electro Service Ltd, a Mitsubishi Drives System Centre, to find a solution to a specific problem on their multidrive conveyors. Philips were experiencing difficulties with unbalanced conveyor loading on their existing variable speed drives and any solution had to be retrofitted to their existing control panels.



With a conveyor of nearly 1 km in length, it is not desirable or practical to drive it from one point only. The conveyor is in fact driven from 3 points, using 3 identical gear motors spaced unequally around the length of the conveyor loop. Being locked together via the chain conveyor, the motors were 'forced' to run at the same speed by forces transmitted through the chain causing slip on the motor speed characteristic.

*Application story first released August 1999 by Mitsubishi Electric UK*

To prevent this bunching and stretching of the conveyor, it was necessary to match the speed of a master drive to the speeds of two slave drives, all whilst sharing the torque. The Mitsubishi A500 (with a little innovative programming) had just the tools needed including analogue output of torque and integral PID control.

One of the three A500 drives was set up as a master, with an analogue output of torque. This value was then fed to the setpoints on the PID controllers built into the other two drives. An A500 analogue output card was used to make the connection as the 0-10V output and the 0-20mA input were not originally intended to be used in this way. Additional connections included alarms from the slaves to the master and a shut down signal from the master to the slaves to ensure orderly shut down in the event of a problem with any of the three drives.

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**“In one specific application a saving of over £18,000 was made ... with the introduction of the A500 torque share**

Alan Spriggs  
Philips Components

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According to Alan Spriggs of Philips components, “In one specific application a saving of over £18,000 was made when problems attributed to the conveyor chain were resolved completely with the introduction of the A500's unique torque share solution.”