CONTROL TECHNIQUES™

DRIVES PROVIDE GREAT BALL CONTROL AT SOCCER CIRCUS

CUSTOMER PROFILE

Soccer Circus, the brainchild of Kevin Keegan, is an interactive indoor football centre at Xscape Leisure Park at Braehead near Glasgow. Visitors take part in a number of fun challenges to improve their football skills.

THE CHALLENGE

During Powerplay Super League, players work as a team operating life-size models of footballers to kick balls at targets. The game designers needed a drive solution that would eliminate the requirement for a central drives controller and one that meant the game could continue even if there was an error in the automation system.

THE SOLUTION

Twenty-eight Control Techniques Unidrive SP AC drives are used throughout the game. At the start, the 20 targets, mounted on linear actuators with a long stroke length, are raised to their starting position. Each linear actuator is powered by a Unimotor under the control of a 5.5 kW (7 HP) Unidrive SP fitted with an onboard Programmable Automation Controller (an SM application).

On the back of each target is a Fieldbus I/O module bus coupler which sends a signal directly back to the drive. Each target strike is assessed and, if hard enough, triggers the drive to retract the target below the playing surface. A separate PLC assesses the database, reading the team cards, initiating games, monitoring the scores and communicating with 20 drives via Profibus to start and stop the game.

Two conveyors, with a series of cleats, run through the two sumps picking up 10 footballs at a time. Sensors check there are 10 balls on each conveyor before indexing around to deliver them to the transfer positions, where linear actuators load the balls onto the four delivery conveyors. Unidrive SP AC drives in servo mode control each of these eight axes, the six conveyors and the two linear actuators.

THE BENEFITS

“The versatility, communications and programmability of the Unidrive SP has proved to be integral to the final design. We’ve cut out the need for a central drives controller, with intelligence distributed around the drives, delivering a system that provides effective multiple redundancy. Should an error in the automation system occur, the show goes on, in the best tradition of show business!”

David Birchall, Design Engineering Manager

KEY BENEFITS

- VERSATILE DRIVE
- HIGH LEVEL ON-BOARD PROGRAMMING
- HIGH SPEED COMMUNICATION
- EFFECTIVE MULTIPLE REDUNDANCY

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