

Get set for faster lines

A novel position sensing technology called Mu-Track promises to increase the automation of manufacturing lines.

Position sensing technology is crucial to automation in industry, particularly in pneumatic cylinders which serve as actuators on a highly-mechanised robotic assembly or packing line.

A conventional pneumatic cylinder has a cylinder, piston, sensors and control system. Pressurised air moves the piston, which in turn drives the device it's attached to.

A point sensor at either end of the cylinder detects the piston as it approaches and stops it by switching off the air supply. Adjustments to the stop position require the sensor to be moved, which makes it time consuming and expensive to adjust.

Mu-Track enables the cylinder control system to be programmed to change the stop position of the piston without any manual intervention on the manufacturing line. It can measure the position of a magnet remotely and continuously over a large range and through thick barriers of non-magnetic material.

Mu-Track was developed by sensing experts at Sagentia Group, the technology development and venturing company based in Cambridge, formerly known as The Generics Group.

Sagentia Group is now looking for partners and collaborators to develop, manufacture and sell Mu-Track sensing

technology into various industry sectors. It has already generated interest among pneumatic cylinder manufacturers.

Developer of the technology Dr John Golby sees further applications in sectors like automotive where there is a need for a low cost continuous magnetic position sensor to monitor suspensions. Further applications include fuel level sensing in the automotive sector, and liquid level sensing in process control.



Position sensing technology is crucial to automation in industry.

The Mu-Track position sensor has four elements

- Printed circuit board (PCB) with transmit and receive conductive tracks
- Thin sheet of magnetic material located above the PCB
- A magnet or 'target', in this case the piston inside the cylinder
- Signal processing electronics

Developers of Mu-Track overcame a significant technical challenge. While the target transmits a DC magnetic field through the cylinder wall, the PCB can only transmit an AC electric field. The two fields are incompatible. The crucial part of Mu-Track is the thin magnetic sheet sitting on top of the PCB. This component acts as a 'translator', taking the DC signal and converting it into something the PCB can respond to.