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ABB drives help cut dust and odours

Using variable speed drives from ABB Drives Alliance partner Slater Drives Systems has enabled a northern company to develop a revolutionary new system for removing dust and odours from the atmosphere, by reducing the size of the motor needed.

The Rotary Atomiser, produced by Probe Industries in Whitley Bay, Tyne and Wear, is used at sewage plants and waste sorting centres to suppress dust and obnoxious smells. It uses a spinning head to produce millions of microscopic droplets of water, which are then sprayed out in a fine mist. The droplets suppress dust in the atmosphere and can also carry chemical agents that combine with odours and neutralise them.

Managing Director of Probe Industries, Phil Rutherford, says: "As a manufacturer of odour neutralising agents we wanted a good method of dispersal. We had tried conventional nozzles systems but these were inefficient and produced poor results.

"Research with the University of Northumbria helped us develop the rotary system. We needed a variable speed drive as the motor had to fit inside the 450 mm diameter cowl of the atomiser yet turn at 12,000 rpm. A direct drive system would have needed a much larger motor. We tried various makes of drive, but the university recommended ABB drives to us, as they had used them in the tests. Only the ABB drive provided the reliability we needed."

Drives Alliance partner Slater Drive Systems provided an ABB ACS 101 0.37kW variable speed drive to power the 2-pole 200W atomiser motor. This turns an inner mesh which forces droplets through an outer mesh, producing up to 238 billion uniform water droplets from a single litre of water, giving a spray that can cover a distance of 30 metres.

Probe Industries also wanted to improve the coverage area of the atomiser. Says Rutherford: "We decided we needed a method of turning the atomiser through an arc of 180 degrees. Our first thought was SDS. They helped us develop the oscillating feature, supplying an ABB drive to suit our needs. With the ABB drive, it was quite quick and easy to do. SDS also regularly run training courses for us to get more familiar with the drives."

Probe Industries plans to produce up to 30 Rotary Atomisers a month.

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Caption: The revolutionary Rotary Atomiser, made by Probe Industries, which removes dust and odours from the atmosphere uses ABB variable speed drives supplied by Drives Alliance partner Slater Drives Systems.

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