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# OEM offers dairy farmers 60 percent energy saving using variable-speed drives

Fairy farmers can save up to 60 percent on their milking parlour energy costs following OEM firm Milkflo Dairy System's decision to offer ABB variable-speed drives (VSDs).

The VSDs can be installed on any make of milking parlour and cut energy use by supplying only the vacuum pressure needed for the number of cows being milked. The cost of the drives can be offset by making use of government grants for the purchase of energy efficient equipment.

Milkflo supplies and services milking and feeding systems for dairy farms throughout Cornwall, Devon and the South West. Managing Director George Berriman wanted to offer dairy farmers in the area an option to add VSDs to their milking parlour machinery to cut their energy use.

"Conventional systems have a motor driving a vacuum pump flat out, using an air pressure regulator to blow off excess vacuum pressure," says Berriman.

Berriman asked ABB authorised value provider, APDS, to test ABB drives on a typical milking parlour installation at its workshop in Redruth. APDS used a vacuum transducer to signal an ABB drive when the air pressure had changed through a number of valves, simulating a cow finishing its milking. Using its built-in PID function the VSD ramps down the motor to maintain the correct vacuum pressure.

Alan Jones of APDS says: "In a real milking parlour, this would mean that with say, 30 cows being milked, the motors would be run at 80 percent speed. As cows finish milking the speed of the motor is ramped down accordingly so with 15 cows, it would be running at maybe 50 percent speed, to maintain a stable vacuum within the system. During the washing of the system after milking the system uses most vacuum and will run at almost 100 percent at times.

"The ABB drive worked right out of the box. We simply fine-tuned the PID functions and it worked as expected."

"We have already supplied and retrofitted around 30 drives to farmers' milking parlours," says Berriman. "These range from 3 kW to 30 kW. One drive can operate two motors, making it more cost-effective for farmers. For example, if their facility has two 7 kW pumps, one 15 kW drive can operate them both.

"With this system, farmers can save up to 60 percent on their energy costs. This can lead to a significant monetary saving as some systems work from 12 to 15 hours a day."

Although the VSD-based pressure control is fully automatic, farmers can alter the pressure manually to maintain the health and comfort of particular cows.

Installation of the VSDs on the milking parlours causes no disruption for the farmer as the work can be done between milking sessions. As many farms have a single phase supply, the VSDs can be converted to operate on single phase. A further benefit is that the use of the VSD causes less wear and tear on the milking parlour pumps.

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**Caption:** Milkflo Dairy System's decision to offer ABB variable-speed drives can save dairy farmers up to 60 percent on their milking parlour energy costs.

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