

DSL's AutoPilot4Feed provides effective energy monitoring and reduces consumption



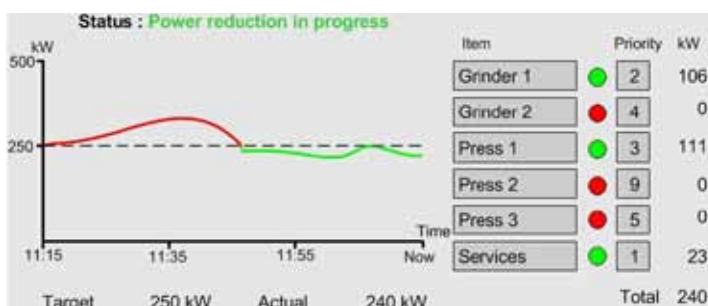
With ever increasing fuel costs and new government directions, energy is becoming an even stronger focus for feed mills. The latest version of DSL's AutoPilot4Feed (V7.02) can record, analyse and reduce energy consumption by using a variety of facilities and techniques.

The latest version of AutoPilot4Feed monitors energy usage of the grinders and pellet presses and records this with batch and pellet press run information. This information can be exported to Excel or other software packages for further analysis.

Energy monitoring can be taken to a higher level using the **PowerMonitor4Feed** option which monitors power consumption in a number of plant areas including individual pellet press lines. This gives kWhr/tonne for each product and run, thus letting you see how much power each product consumes, and lets you adjust settings to minimise power consumption. A variety of displays and reports let you see the full picture, allowing you to make informed decisions about reducing energy.

High demand energy reduction

DSL Systems has been working with EnerNOC to help sites reduce power with their Demand SMART power reduction scheme. Companies get payments by being able to significantly reduce power consumption for short periods from time to time. AutoPilot4Feed ensures that the operators know what is required and alarms if the total power reduction is not enough.



Screen shot of AutoPilot4Feed's power monitoring system

Intelligent Motor Control

By controlling motors with STAR/DELTA contactors directly, AutoPilot4Feed intelligently monitors large motor start-ups and by switching from STAR to DELTA at the optimal time. This can save power, especially with motors like grinders which can take a long time to slow down.

When motors are fitted with inverters, AutoPilot4Feed automatically slows items at the appropriate time to save energy. This particularly includes grinders, grinder fans and cooler fans. Cooler fans can also be slowed when less cooling is required depending on temperature requirements and atmospheric conditions. AutoPilot4Feed now has communication drivers to directly interface to Altivar and Danfoss inverters.

AutoPilot4Feed shuts down items automatically when equipment is not needed and has been idle for a while. These items are then automatically re-started when required. As always, all timers are adjustable letting you easily change any settings.

Plan4Feed simplifies production planning

It was only our last newsletter in January where we described some new features to the production planning facility; Plan4Feed. This system has continued to evolve and many of our customers are adding this option to their system and feeling the benefits. DSL plan to develop this system further to include raw material purchasing and truck collection planning capabilities.

The screenshot displays the Plan4Feed software interface in Supervisor Mode. The top window, 'Plan4Feed - Order List', shows a table of orders with columns for Product Code, Amount, Blended, Customer Code, Hauler Code, Order No, Latest Required Date, Status, Ordered Product, and Comment. A pop-up window provides details for Product 50 - Supermix + 50 Maize Blend, including quantity required (10,000 t), order number (LOT00052016), formula, delivery date, and customer information (MR ROBERT GALLAGHER).

The bottom window, 'Plan4Feed - Production Programme', shows a Gantt chart with columns for Press Line 1, Press Line 2, Press Line 3, Press Line 4, and Meals. The chart displays production blocks for various products and quantities over time, with a key indicating different batch types like Transit batch, Press bin stock, Live Day Programme, Manual batch, Hold, Late, Cross contain hold, Die change needed, and Orphaned batch.

Facilities added recently include:-

- Multi-user capability has been improved with automatic record locking when dragging and dropping orders to the production schedule.
- Multiple orders on the planning window can now be shown as one continuous block to improve readability.
- Orders may be modified in the planned stage.
- Report capabilities have been enhanced with facility to print the contents of the current window.
- Order number search facility.
- Archived and "On-Hold" products can be optionally highlighted in red.

Pellet press optimisation

AutoPilot4Feed has been further improved to include new advanced techniques for pellet press control to optimise quality, energy usage and throughput. These facilities may be retrofitted to older versions and installed remotely to minimise costs.

Throughput optimisation

This facility monitors the spare load capacity in the pellet press. When the pellet press has had spare capacity for a certain period of time the system will automatically increase the maximum throughput rate. This is repeated a limited number of times. All parameters are fully adjustable and the facility is enabled in the product profile so it can be turned off for quality sensitive products.

Automatic jogging

Following a clean-out, the pellet press will be jogged several times automatically to clear out any material. This helps the start up of the pellet press on the next run. A manual jog button is also made available.

Automatic start-up

Each pellet press line can be configured to start up automatically using default settings when product is detected in the pre-pellet press bin. This means there is no waiting for the operator to start a pellet press run, who may be pre-occupied on another task. This can be enabled / disabled using a button for each press bin on the graphics.

Returns cross contamination matrix

DSL have added a further cross contamination matrix so the system can automatically determine when returns can be fed back in to the next product run.

Automatic density calculation

Product densities can vary from one day to the next due to variances in the raw materials. It is now possible to allow AutoPilot4Feed to automatically update product meal densities. This is done while the meal is discharging from the mixer under hopper. As the quantity of meal (kg), time to discharge (s) and discharge rate (m³/hr) are known, the density can be calculated. With a more accurate density value the feeder through-put and liquid additions at the pellet press are calculated more accurately.

Mitsubishi FX3 PLC driver added

DSL have added a new PLC driver to AutoPilot4Feed for Mitsubishi FX3 PLCs. These PLCs are not as modular as the higher end Q series but may be a more cost effective solution for small plants.

On-Line Demonstrations

DSL Systems are now able to offer demonstrations of their control systems over the internet. You will need to download the TeamViewer software to enable this. We will give you the access code to our demonstration system and we can then give a full interactive demonstration or show any particular aspect that may be of interest. Contact Matthew Swallow to arrange a demonstration.

Cambrian select DSL's AutoPilot4Feed



Cambrian Pet Food are the latest company to benefit from an AutoPilot4Feed installation. The system has been installed in stages over the last few months in line with mechanical modifications to control the intake, weighing, blending, extruder routing and finished product blending.

"Thank you for your support, honesty, co-operation, flexibility and professionalism. We are very pleased with DSL Systems."
Jonathan Davies - Operations Director, Cambrian Pet Food

Red Lion communications converter

DSL have recently trialed the Red Lion data station plus communications converter. This allows AutoPilot4Feed systems to communicate with PLCs where a communications driver doesn't already exist. AutoPilot4Feed already has built in drivers for Mitsubishi, Allen Bradley, Telemecanique, Modicon, Wago and Siemens PLCs. This device provides a cost effective method of communicating to some of the other less common types of PLCs and other devices. This is very useful when upgrading an existing control system as it allows the existing PLCs and wiring to be kept in place thus reducing cost and complexity of an upgrade.



DSL Systems would like to thank everyone who took the time to visit their stand at Victam International in Cologne this May. Our AutoPilot4Feed and Warehouse Stock Tracking systems were on display and attracted a lot of interest.



DSL's stand at Victam manned by Paul Girdham and Matthew Swallow

"I have worked with the DSL process control system at Moy Park's Ashbourne Mill for over ten years and found it to be a very robust and comprehensive process control system. The DSL support engineers have always been on hand to assist and advise with any issues, allowing continuous production at all times." Aubrey Dennison, Mill Manager, Moy Park

Ethernet driver for load cell amplifier

DSL have developed a driver to communicate to a Practicon Ethernet Load Cell Amplifier. This simplifies wiring and speeds up the link to a weigher as the signal no longer has to come in via a PLC. This can improve weighing accuracy and maintainability.

Andrew's Malta upgrade

Andrew's Feeds in Malta installed their first AutoPilot4Feed system in 1999. DSL have just completed an upgrade to the latest version and extended the system to fully automate the pellet presses. Oliver Fsadni, production manager commented "The pellet press lines now operate very reliably at increased efficiency and throughput."

Batch time summary report

Many sites are finding our new report useful which summaries batch times in a selected period. The report shows the weighing, grinding and mixing times for each product. At the end of the report the products with the longest times in each production area are shown so these may be investigated.