



FOSS



Flour Milling Process Analysis
Get more out of your production with
High Resolution in-line analysis

ProFoss™

Dedicated Analytical Solutions



Get a clearer picture of your flour milling production with High Resolution process analysis.

Let your production staff improve your business

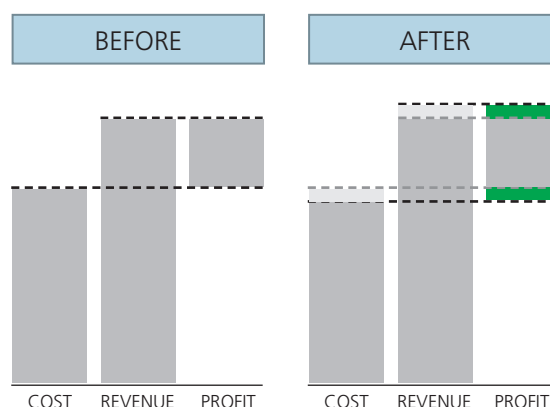
Profit opportunities are waiting to be found in your flour milling process.

For instance, yield can be improved through more accurate control of the expensive wheat qualities and the moisture and ash in the flour. At the same time, improved consistency of product could give you new pricing options.


Give your production staff the right tool in the form of a ProFoss™ High Resolution process analysis solution from FOSS and they can achieve increased yield and improved consistency. Users of such solutions report a rapid return on investment and a payback time of typically less than twelve months.

Advantages of flour milling process control include improved yield and profit based on:

- Savings on raw materials
- Consistent product quality
- Higher value products for your customers
- Increased energy efficiency
- Reduced re-work



Stretch your profit zone: Production costs can be decreased and the higher product consistency will increase your competitiveness.



"FOSS is committed to process analysis because, quite simply, it is the future of food production. Tighter control of production is a sure way for you to improve both profits and customer satisfaction while minimizing energy usage."

Peter Foss, President

The FOSS difference – flour application knowledge and experience

At the heart of any FOSS analytical solution is a simple and enduring concept: To give you just what you need to obtain accurate, timely information according to the demands of your production environment.

This is a principle that FOSS has followed for over 50 years. And that's why today, FOSS is unique in offering dedicated solutions for flour milling process analysis and control. Our knowledge and experience ensures that your process analysis solution is right for your demands and can be applied quickly and easily to your production.

Investing in a process analysis solution

With any process analysis solution, you are effectively putting your production in the hands of technology. FOSS is the right partner to provide a reliable solution that will run day in, day out and year after year.

FOSS flour milling solutions offer:

- ☑ Proven technology for accurate and trouble-free operations
- ☑ User-friendly interfaces allowing anyone in the plant to contribute to process control
- ☑ Service programs offering a range of options to suit your business. Get your service in a timely manner by fully trained local staff onsite and/or remotely through internet

FOSS Total Service Solutions

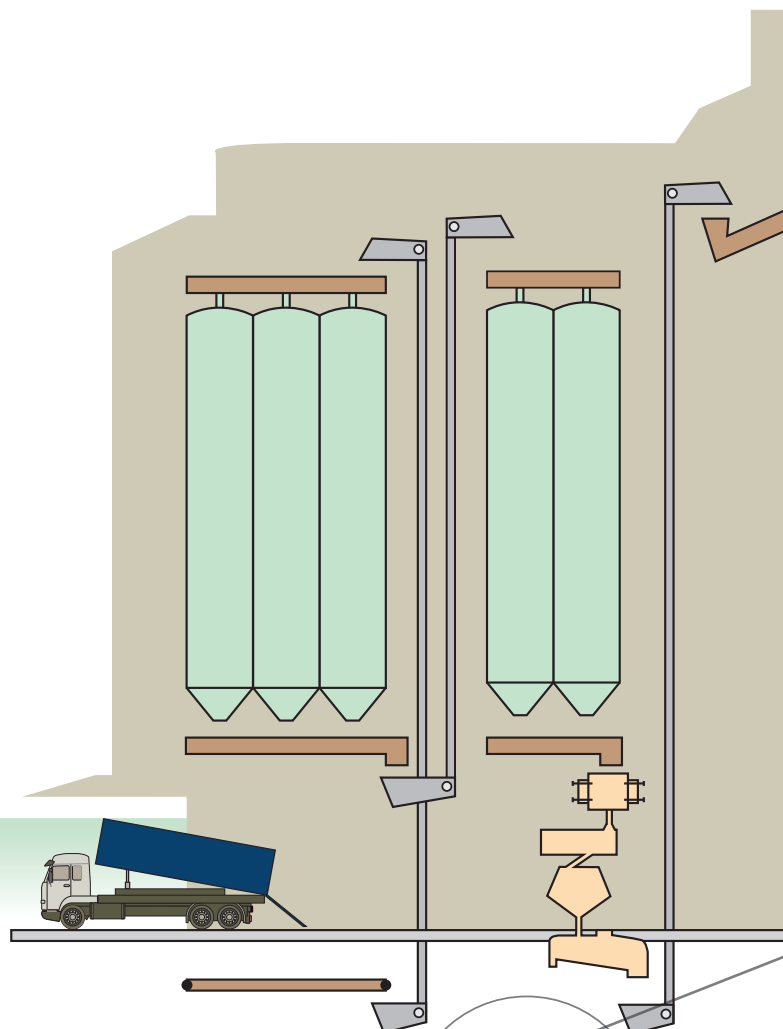
- FOSS is committed to providing complete and fully integrated solutions
- Our relationship with you is a continuous partnership
- FossCare™ Total Service Solutions are available at multiple levels according to your needs

FOSS

- World's leading provider of analytical solutions for the food, agricultural, chemical and pharmaceutical industries
- Helps customers improve profit, product quality and food safety
- FOSS solutions are used for routine laboratory analysis as well as at-line and in-line process control
- Over 90 of the world's top 100 food and agricultural companies use FOSS solutions
- FOSS analyzers are analytical solutions dedicated to specific process needs
- Strong global organization with focus on growth
- Privately owned and financially stable

How to improve your flour production

In process control, seemingly minor adjustments can lead to significantly increased yield and revenue. A FOSS in-line process analysis solution employing High Resolution technology gives you the accuracy you need to monitor and control your process accordingly.



ProFoss™ – the optimal analyzer for flour milling process analysis

- Robust, process solution withstands dust and vibration and complies with hygiene and explosion regulations
- Reliable and low maintenance – keeps on running for maximum uptime
- Results can be fed into your production/SCADA system and/or be presented on a screen in the production area for rapid adjustments of your process
- Remote instrument surveillance by technical experts
- Full technical support and preventative maintenance options

Parameters

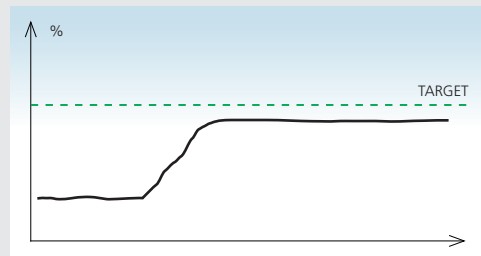
- Moisture
- Protein
- Ash

Primary profit drivers in flour milling are optimized use of costly wheat varieties and optimization of yields through accurate control of moisture and ash levels in the final flour.

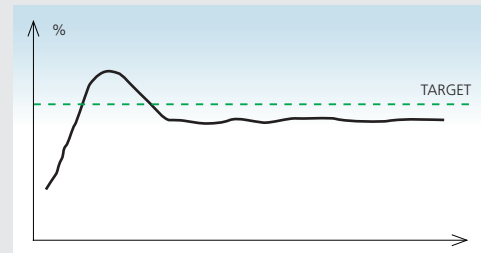
Process analysis benefits

- Production close to target specifications
- Increased yield
- Less rework and start up variation
- Optimized mass-balance

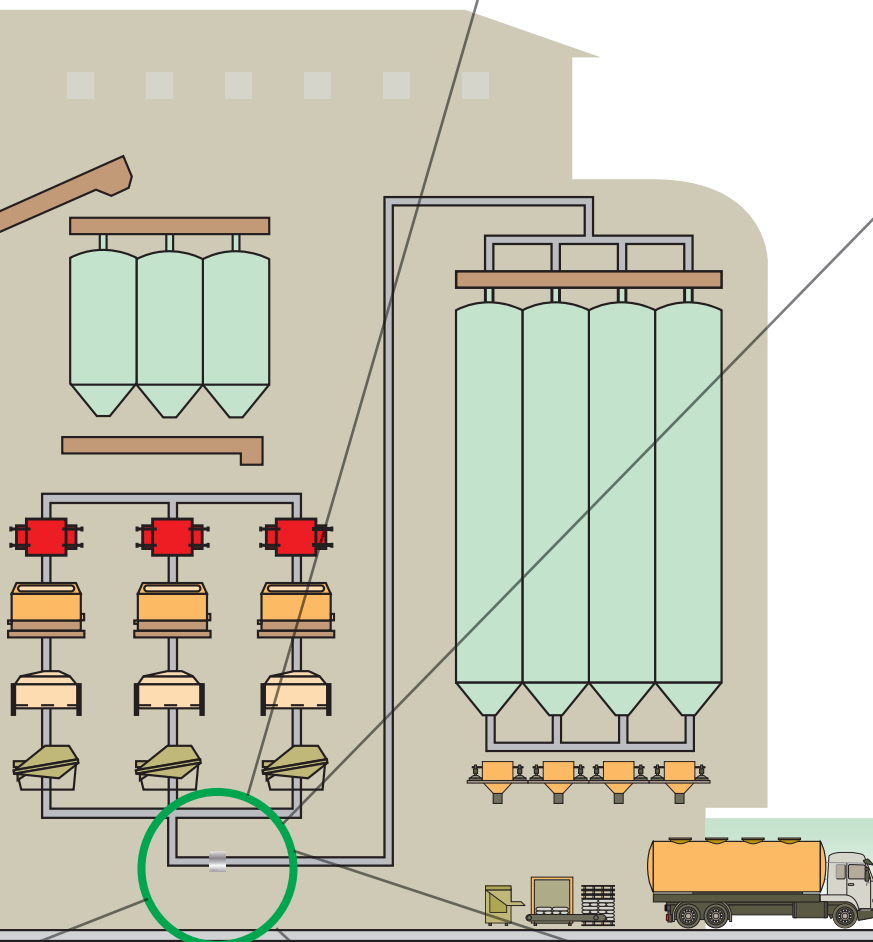
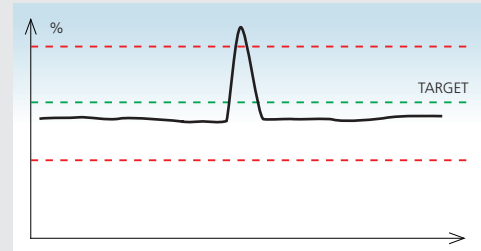
Production closer to target



Reduce start up variation



Alarms when out of spec production



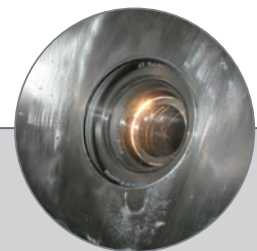
Typical analyser installation point

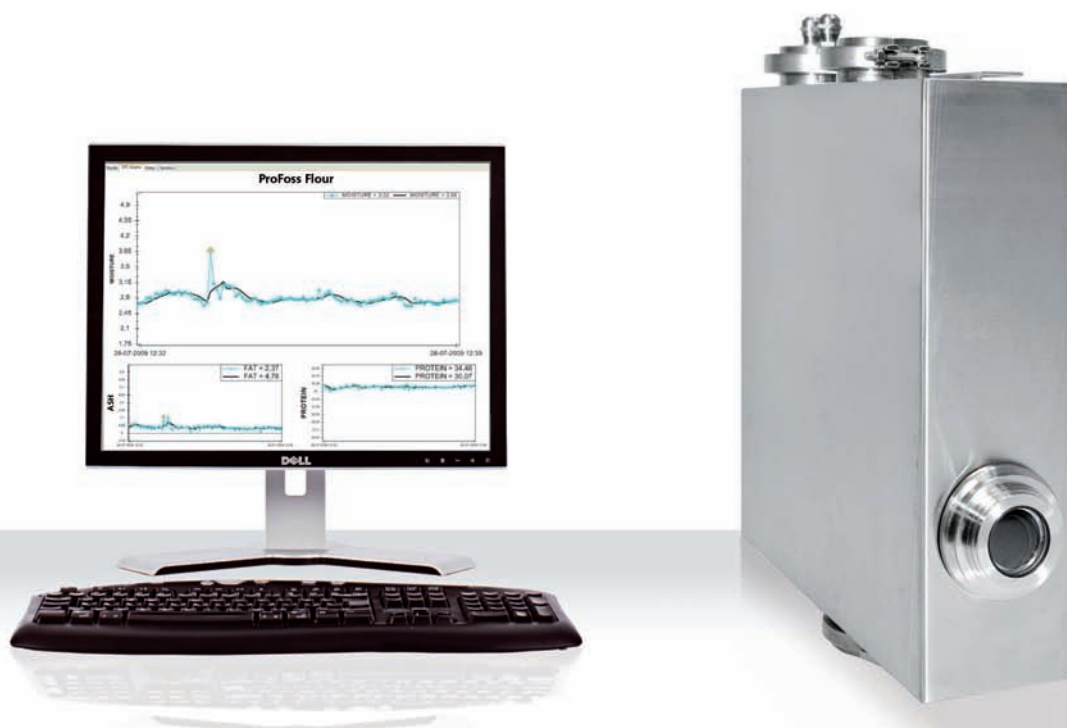
- Installation after the final steps in the milling process to validate and adjust the final flour quality
- Explosion certified according to IEC-EX (ATEX)
- Hygiene certified according to 3-A / EHEDG



Dedicated sample interface

- Window interface connected directly to the pipe
- True in-line – no bypass – no waste
- No moving parts
- No carry over effects between analyses





ProFoss™ – High Resolution near infrared technology

ProFoss™ is unique in employing a near infrared-based analysis technology known as High Resolution diode array analysis. The High Resolution technology ensures accuracy and reliability with measurements based on a high density of data points. ProFoss also includes a dedicated flour sample interface.

Accurate and continuous results

Measurement accuracy is in line with traditional laboratory analysis. However, results are presented continuously rather than a few times per day, giving the opportunity for immediate adjustments to production.

Quick and simple to implement

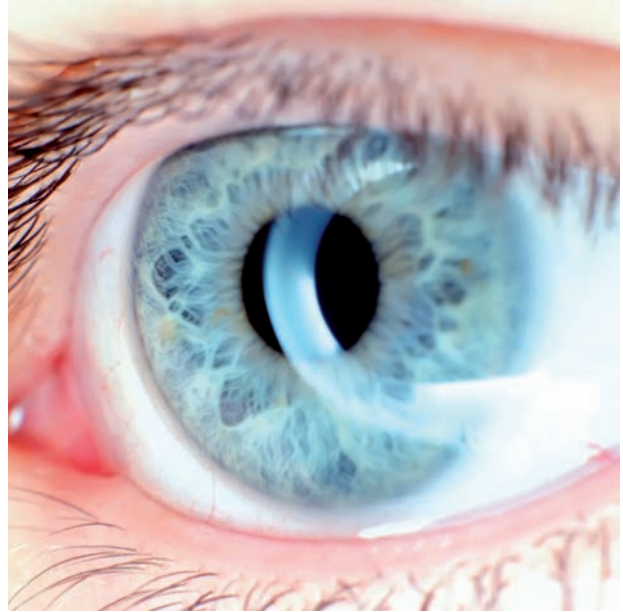
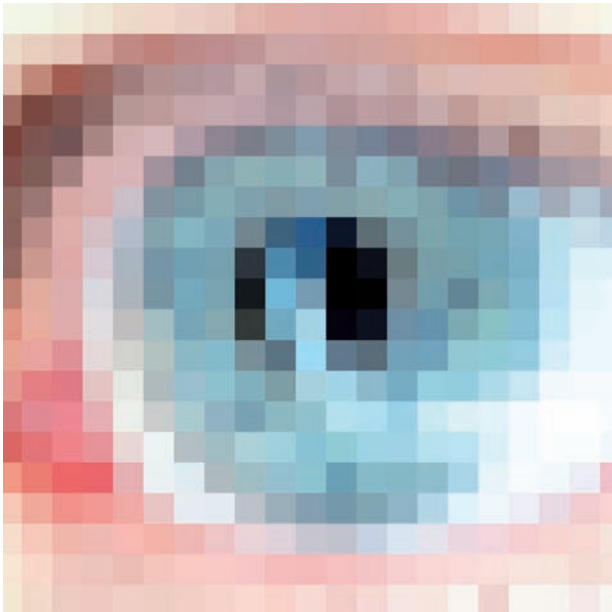
The High Resolution technology behind the accuracy of the ProFoss system also has benefits when implementing the system. Because measurements can be relied upon to be the same across individual instruments and are highly stable over time, you can reduce the time and costs associated with installation of individual analyzers. The standardization and stability of the solution, as well as the intelligent FOSS calibration tool IScal™, makes it fast and easy for non-experts to develop or expand calibrations and transfer them across units.

Robust and low maintenance operation

The ProFoss system keeps on running to ensure high uptime and minimal impact on daily production. Once calibrated, there is no need for constant adjustments caused by drift or other weaknesses. The high stability of the High Resolution technology ensures the same accuracy day in and day out without hidden operational costs.

Intelligent calibration tool – IScal™

Calibration is done either through WinISI™ or by using the new intelligent calibration tool, IScal™. IScal requires a minimum of user experience. Each time a reference sample is collected from the process, a button is pressed on the analyzer to synchronize the scan with the collected sample. Reference data is added and a calibration is automatically developed (or an existing calibration expanded with the new data). The new IScal tool automatically optimizes the calibration algorithms by selecting the most reliable model for future use.



High Resolution near infrared technology gives you a clearer picture of your process. A high number of pixels (diode sensors) in the spectrum secures a more detailed (accurate) and uniform (repeatable) analysis result. High Resolution also enables manufacturing of "identical" (standardized) analyzers which stay the same over time (no drift).

The value of a standardized High Resolution analyzer

A standardized analyzer with transferable calibrations significantly reduces the implementation and maintenance costs.

Transferability is the solid foundation required for rapid implementation of an analyzer into a complex process environment. Furthermore, once a calibration has been developed, it can be reused on other analyzers

The key to achieving this is the resolution of the analyzers' wavelength scale. The FOSS High Resolution technology has one sensor for each nm measured, securing 100% stability of the wavelength scale. In contrast, with lower wavelength resolution, shifts of up to 7 – 8 nm in the wavelength scale can occur, which will require major updates of existing calibrations for each new analyzer installed.

FOSS support plans

FossCare™ is a partnership, where FOSS helps customers with preventative maintenance, remote instrument monitoring, consultancy, training programs and breakdown support. FOSS technicians work directly with the customer to solve any problem that they encounter, leading to maximum uptime and increased yields.

By participating in a Preventative Maintenance program, focus is moved from "fix it when it breaks" to a predictable and proactive approach, reducing the cost of unplanned downtime and emergency repairs and increasing the equipment reliability and availability.

Remote Monitoring and diagnostics

RINA is a remote instrument monitoring and diagnostics software that makes it easy for an internal or external expert to precisely configure, monitor and diagnose FOSS instruments from a remote location. Calibration updates and bias corrections are easily handled through the network and the system can be monitored on a daily basis, allowing you to focus on optimizing your production.

Flour milling solutions from FOSS



Infratec™

Using the Infratec™ 1241 Whole Grain Analyzer, millers can analyze whole grain or flour with a single instrument – realizing efficiency improvements throughout production. One instrument covering both flour and grain minimizes the number of analysis instruments. This makes it simple to implement and run an analysis solution. The need for just a few robust and highly versatile calibrations saves time and money.



ProFoss™

Installed in-line, the ProFoss™ gives a continuous flow of 'real time' results by a direct measurement on the finished flour directly in the pipe after the final sieves. Results can be used to validate the flour quality and allow for adjustment of grain mixing, milling conditions or final flour quality by additions of moisture or gluten before product release. The solution enables consistent production of a flour quality close to product specifications.

FOSS

FOSS
Slangerupgade 69
DK-3400 Hilleroed
Denmark

Tel.: +45 7010 3370
Fax: +45 7010 3371

info@foss.dk
www.foss.dk

FOSS North America Inc
8091 Wallace Rd.
Eden Prairie
MN 55344, USA

Tel: +1 (952) 974-9892
Fax: +1 (952) 974-9823

info@fossnorthamerica.com
www.foss.dk