

ProFoss™ 2

In-line process analysis in the dairy industry



ANALYTICS BEYOND MEASURE

ProFoss™ 2 increases profit in dairy production with continuous analysis, directly in the process line without bypass.

Streamline your dairy production with in-line analysis

Get complete control of your production with a continuous flow of "real time" results of the product composition. Optimise the use of raw materials, run production consistently, get closer to target specifications and make timely adjustments to your butter, fresh cheese or cultured dairy products.

Increase your profits from day one

Profit opportunities are waiting to be found in your dairy process. For instance, more accurate control of the total solids or moisture and SNF content can increase earnings significantly. At the same time, improved product consistency can provide new pricing options, reduce rework and help to optimise the mass-balance.

Improve your business with accurate control

The continuous flow of results provides full traceability, alerts if products are out of spec and enables you to deliver a consistent high product quality that meets the demands of your customers.

Sample types

Butter, fresh cheese, mozzarella, Greek yogurt, quark, whey and milk protein concentrates

Parameters

Moisture, SNF, fat, salt, total solids, protein and calculated parameters such as P/TS

Technology

High resolution NIR technology with a lateral transmittance interface connected directly to the process line

Installation

Outlet of butter churn, after the evaporator, after ultrafiltration or diafiltration, after the cooker stretcher or fresh cheese separator

Specifications

Measuring technology: Lateral Transmittance	
Analysis frequency	Real time: Average analysis time per result 2 - 3 seconds
Wavelength range	850 - 1050 nm
Detector	Si Diode Array
Spectral dispersion Si Diode Array detector	1.0 nm/pixel
Process line interface	Sapphire, 5 mm thick, with food grade FFPM O-ring seal Fits into standard GEA Tuchenhausen Varinline Access Units with Ø68 mm opening or with Ø50 mm opening or FOSS Stainless steel welding flange.
Product temperature	Max 150 °C (302 °F)
Product pressure	Production pressure < 30 bar (< 435 PSI). Shock pressure < 75 bar (< 1088 PSI). Warning! Varinline access units higher than DN 80 permit a maximum pressure of 10 bar (145 PSI).
Optical fiber protection:	Steel armoured (1, 3, 5 or 10 meters)

Technology	NIR technology
Software package	ISIScan NOVA™ for instrument control
Wavelength accuracy	< 0.5 nm
Wavelength precision	< 0.02 nm
Wavelength temperature stability	< 0.01 nm/ °C
Spectral noise	< 60 micro AU
Vibrations - require optical fiber fixation	0.4 Grms
Ambient operating temperature	Basic configuration -5 °C - 40 °C (23 °F - 104 °F), Cooling with a compressed air line allows use up to 65 °C (149 °F) ATEX configuration 0 °C - 50 °C (32 °F - 122 °F)
Pressurised air – cooling (Amb. Temp. 45 - 65°C)	Cooling air Flow rate minimum 5 l/min, >99.9 % water free, >99.9 % free of oil and fine particles down to 0.3 µm
Ambient humidity	< 90% RH
Dimensions (W x D x H)	w x h x d = 420 x 420 x 135 mm (16.5 x 16.5 x 5.3 inches) + brackets to hold the unit
Weight	25 kg (20 kg)
Power supply	1 phase, 100-240 VAC (max ±10 % of the rated voltage), max. 40 VA, 50 - 60 Hz
Cabinet / Housing materials	1.5 mm (lid 2.5mm) Stainless Steel EN 1.4301 (SS2333)
Mechanical environment	Process control equipment
Degree of protection	IP 69*
Approvals	ATEX & IECEx certified (Dust explosion approved)
Hygiene	3A hygiene certified
Communication	KEPServerEX (Ethernet, Analogue Profibus/Profinet) to PLC/SCADA; FossManager™
Network	High quality, shielded LAN cable; minimum category 5e. RJ 45 (IP 67) LAN connections
Operation	Indoor use or outdoor shielded from rain and direct sunlight

* IP69 is the highest protection for dust entering the unit. IP69 means protected against the effect of high-pressure water and/or steam cleaning high temperature.

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