Tetra Alfast® Plus

Direct In-line standardisation

Tetra Alfast Plus is designed for automatic in-line standardisation of the fat, SNF and protein content in milk and cream direct after milk separation for dairy products including; low and high fat market milk, market cream, flavoured milk, cream for butter making, milk for fermented products and powder production, cheese milk, whey, ice-cream mix, formulated products and functional foods.

Tetra Alfast Plus is fully automated to ensure uniform product quality while in production

Tetra Pak

protects what's good™

Working principle

By continuously controlling the back pressure of the separator cream outlet in a Cascade Control System, an accurate fat content is achieved, regardless of variations in the raw milk fat content.

The raw milk is separated in the separator where the skim milk pressure is kept constant by a constant pressure-modulating valve. A flow transmitter measures the cream flow from the separator and the fat content is calculated from a temperature compensating density transmitter. Another flow transmitter measures the flow of standardised milk.

On receiving signals from the transmitters, the computer in the control panel calculates the fat content, in relation to set points and flow rates, and then transmits control signals to the cream flow modulating valve, thereby controlling the fat content, whenever required.

All models have a surplus cream line that is used for regulating the flow rate of remix cream into the skim milk line, thereby standardising the milk

Options

SpotOn
SpotOn is a software package including the following functionalities:
- Direct in-line compensation
- Control of product change
- Control of separtor discharge
- Control of filling pasteuriser
- Control of circulation of pasteuriser
- Quick-batch an automatic in-line batch standardisation system

Flowchart for Tetra Alfast Plus - Standardisation of fat content in cream and milk
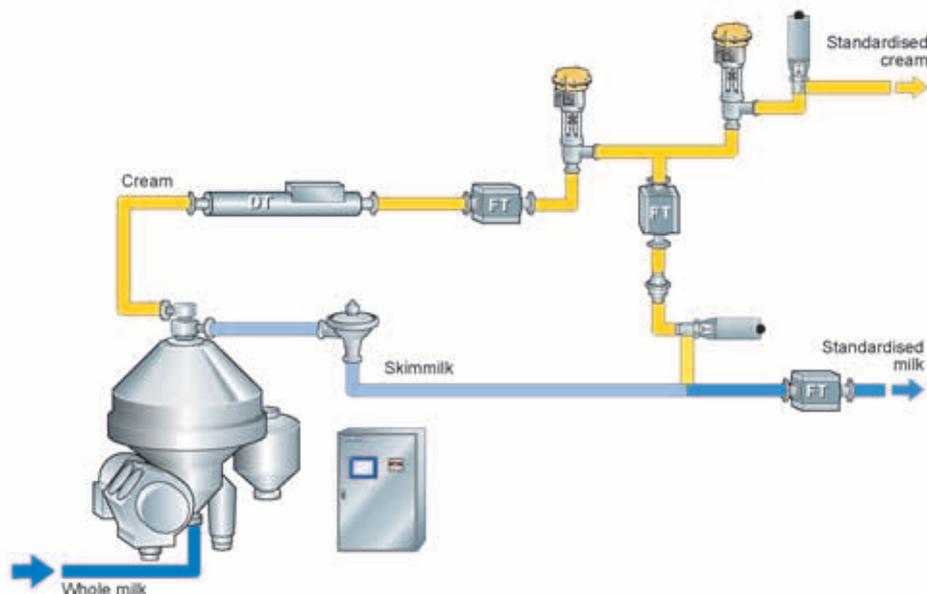
Note: Separator not included in Tetra Alfast Plus delivery

Extended applications

- Tank standardisation from two silo tanks without any in-line separator.
- Automatic calibration for SNF variations.
- Software for ratio control between Fat/Protein or Fat/SNF.
- Skim milk removal.
- Partial by-pass of separator.
- Cold milk standardisation with a temprature between 6-12°C.
- Protein sensor, the sensor takes samples in the standardised milk pipe to analyse the actual protein content.

Additives

- Additive to milk for adding another constituent to the milk.
- Additive to cream for adding another constituent to the cream.
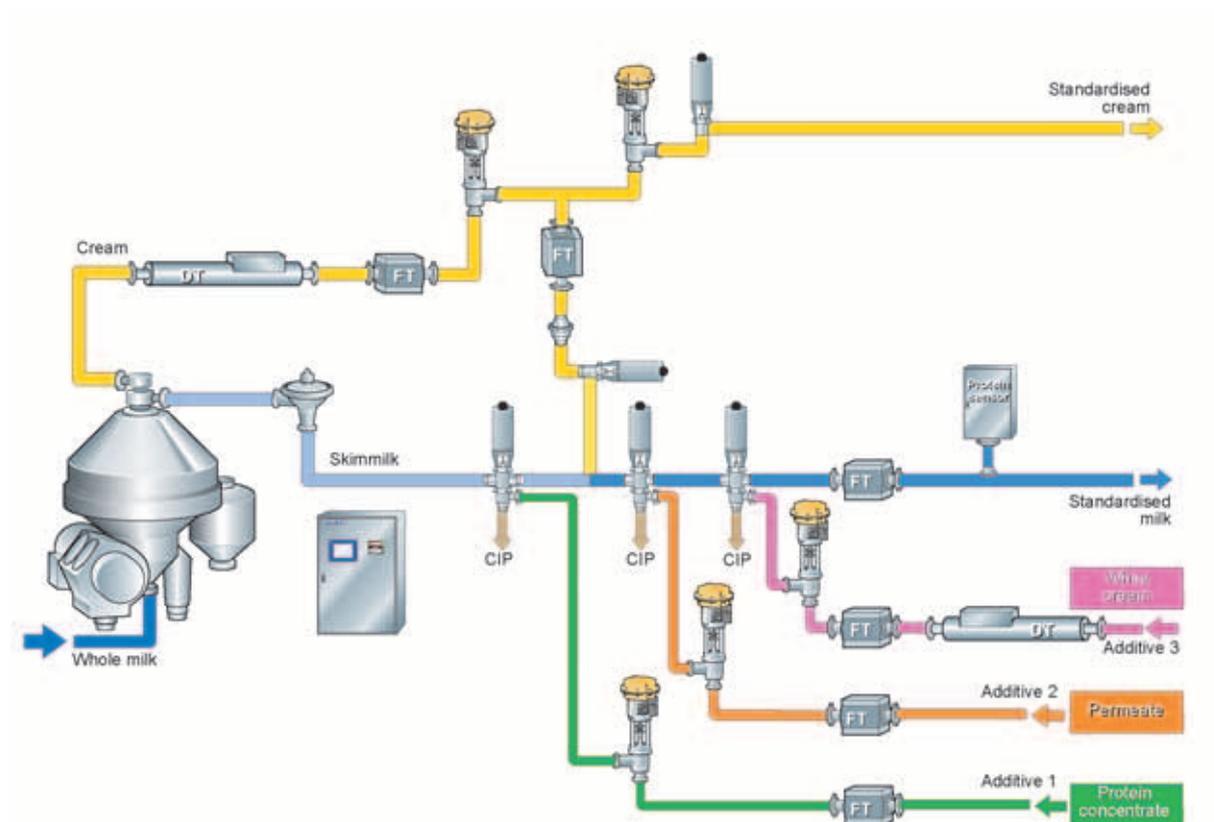- Vitamin dosing.

Production safety

- Mix-proof valves.
- UPS, Uninterrupted Power Supply for the control system.
- Air cooler with compressor for control panel if temperature in surrounding process area exceeds 28°C.

Control panel

- Industrial PC for operator interface, installed in the control cabinet door.
- Communication with supervisory system.

Flowchart for Tetra Alfast Plus - Production of fat and protein standardised milk

Note: Separator not inclued in Tetra Alfast Plus delivery

Processing parameters

Raw milk flow rate, l/h
5 000 - 75 000

Standardised milk fat content, % F
≥ 0,2

Hot milk, standardisation temperature, °C
45 - 65

Basic Unit
Main components
- Density transmitter with four wired PT-100.
- Flow transmitters.
- Control valves, Change-over-valve, Non-return valve, sampling valves.
- Pressure gauge.
- All internal wiring and piping.
- All components pre-assembled on a stainless steel frame except the flow transmitter for standardised milk. It is delivered separately and should be placed at a distance of >3 meters away from the mixing point.
- Technical documentation.

Control panel
- ABB SattLine control system.
- Digital paperless recorder.

- Main switch, emergency stop, solenoid valves and wiring.
- The unit is prepared for remote operation which enables integration with a master control system such as Tetra PlantMaster.
- The control panel is in stainless steel and has its own frame and can be placed on any side of the process unit or at remote location.

Human-Machine-Interface
- Office PC for installation in control room.

Technical data

Consumption data
Power consumption*, kW   0,5
Instrumental air, 600 kPa,   200
Nl/min
Voltage 200-400 VAC, 1-phase (max variation ±5%), frequency 50/60 Hz

Shipping data
Approximate figures
Net weight, kg   200
Gross weight, kg   430
Volume, m^3 3,3

Environment
- Tetra Alfast Plus is built in a modular design, which makes them easy to rebuild and adopt to new duties.
- Tetra Alfast Plus consist of parts that can be separated for recyling purposes.

Dimensions

Approximate dimensions of basic unit in mm

![Tetra Pak]