СИСТЕМЫ ОБРАБОТКИ ЖИДКОСТИ STANDOMAT

Технические характеристики

The GEA standomat has been designed for continuous cream fat or milk fat standardization in combination with the separation process.

Control system
With all models the cream fat content is determined via density measurement in a mass flow meter. The cream fat control is effected by variation of the cream flow. Control procedures adapted to the different operating conditions (start up, production, bowl discharge, shut down) take into account the specific requirements of the separator.

For standardizing, a part of the cream flow is controlled via an inductive flow meter and dosed back into the skim milk. The control components for the skim milk backpressure are integrated on the standomat base unit. For all milk applications a control signal is supplied for the feed flow to the separator.

Procedure with warm milk
A high performance of the control system requires a stationary operation of the system at steady process conditions. The system is calibrated according to laboratory tests, which can be done by different analytical methods. Thus, any verification has to be carried out using the same methods. The accuracy of these different methods has to be taken into consideration while interpreting results.

The maximum fat content for standardizing is 0.2 % below the incoming whole milk fat content. The deviation from the setpoint for cream fat control is +/- 0.2 %. For milk standardizing, this deviation is on-line 0.05 % right after the control unit and 0.025 % after a buffer tank.

Procedure with cold milk
Cold milk standardization in particular makes possible a fat content in the milk of 0.5 – 4.2 %, whereby the raw milk content should be at least 0.2 % above the standardized milk fat content. The standard deviation is around +/- 0.04 %. The cream can be standardized up to maximum 40 % fat content. The control deviation here is +/- 0.4 %.

Models

Depending on the application and the control task our customers can choose amongst different standomat models:

standomat WC
fat control for whey cream
standomat C
fat control for cream
standomat CB
fat control for cream + complete back blending (whole milk)
standomat MC fat control for cream + fat control for milk
standomat MCL
fat control for cream + low fat cream < 28 % + fat control for milk
standomat MCFD
fat control for cream + fat in dry matter control for cheese milk
standomat MCFP
fat control for cream + fat to protein ratio control for milk
standomat MCA
fat control for cream + fat control for milk + additive dosing
standomat MCLA
fat content regulation cream (also < 28 %) + fat content regulation milk + additive dosing
standomat CMC
fat content regulation cream + fat content regulation milk
The above-named versions describe only some of the possibilities available. For individual applications, GEA offers solutions customized to the needs of the customer.

Partial homogenizing

The models MC, MCL, MCFD and MCA can be prepared for partial homogenizing of the standardized or whole milk. With this a good homogenizing effect can be achieved with a homogenizer of 1/3 of the total capacity.

Cleaning

The automatic cleaning of the standomat is effected by the CIP of the separator. Optionally the connecting valves for a separate CIP of the surplus cream line can be integrated into the unit. The additive dosing line of the standomat MCA is cleaned in a separate cycle in any case.

Control system

For automation and visualization of the standardizing system a SCU 8 controlunit is used. It is equipped with a monochrome 6“ graphic display and an alphanumeric membrane keyboard. The display shows the actual operating state with actuation status and all measured analogue values. For every control loop the current setpoint, actual value and control value are shown as well as a trend curve with the dynamic performance.

Control parameters and limit values are password protected against unauthorized modifications. Critical conditions trigger alarm messages which are also saved in a log file. All pumps, valves and control valves can be manually operated from the control unit. In conjunction with a new machine these function can be integrated in the control unit of the separator. Otherwise the standomat is equipped with a separate control unit communicating via digital I / Os or Profibus DP with the separator control.

Compact unit
The models WC and C do not require a rack, the individual components have to be mounted on site into the separator connection lines. The models CB, MC, MCL, MCFD and MCA are preassembled as a compact unit in a stainless steel rack. The control cabinet and the solenoid box are mounted on the rack. All internal electrical and pneumatic connections are installed. Each unit is tested before dispatch.

Capacity
From 5000 l/h up to 75,000 l/h