

## DAIRY PLANT AUTOMATION

# Au2mate MAStermate STANDARDISATION unit

- Automatic high accuracy control of milk and cream fat %
- Pretested standard solution for rapid installation and start-up
- Total solution inclusive of hardware and software
- Configurable recipes
- Rapid process response
- Tank standardisation

### APPLICATION

Au2mate standardisation unit is applied for automatic high accuracy standardising of the fat % in the cream line and the milk line after a milk separator. The standardisation unit can be applied in new as well as existing installations.

The standardisation unit can operate as stand-alone or seamlessly integrated with a factory control system. The unit is pretested and delivered ready to install in the dairy plant.

### OPTIONS

The Au2mate standardisation unit can as an option be delivered with or without local operator panel and with seamless integration to the factory control system via an S88 based hand-shake interface. Furthermore, the unit can be expanded with an interface to a high accuracy milk in-line/at-line analyser, analysing the fat, the protein and SNF in the milk line for high accuracy regulation and tank standardisation of the of the milk fat & protein ratio.

### DESCRIPTION

The working principle for the Au2mate standardisation unit is basically to standardize the cream to the required cream fat % and blend back the cream into the milk line in an adequate quantity to achieve the required milk fat %. This functionality is achieved by means of 2 regulating valves installed in the cream line operating in a cascade regulating loop based upon measurement signals from 2 density transmitters installed in the skim milk line and in the standardised cream line and a flow transmitter installed in the cream line dosing back to the milk line. The density transmitter measurement compensates for fluctuations in the product temperature as well as variations in the fat percent of the raw milk to the separator.



## BASE CONFIGURATION

Au2mate MASStermate standardisation unit is pre mounted, wired, and tested on frame and includes the following equipment:

- Control panel
- 2 pcs mass flow transmitters
- 1 pc flow transmitter
- 2 pcs regulating valves
- 2 pcs process valves
- 2 pcs manometers

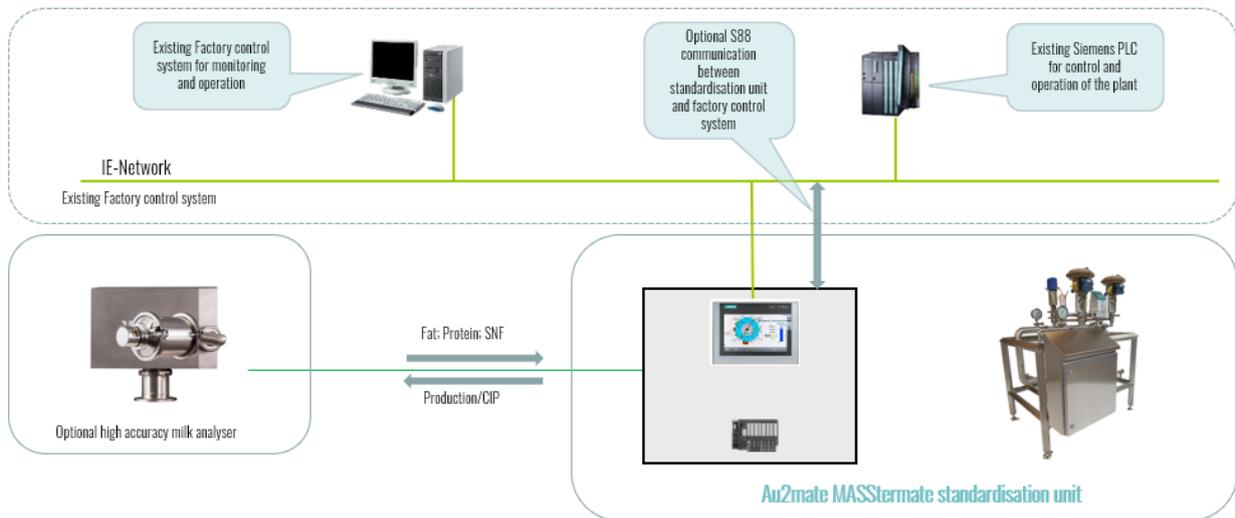
## OPTIONS

- S88 integration with factory system
- Interface to milk analyser
- Tank standardisation
- Connectivity for remote service

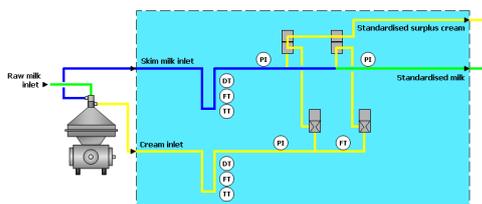
## TECHNICAL DATA

- Stainless steel pipes & fittings AISI-316
- Siemens or E&H flow transmitters
- Samson regulating valves
- SPX or Alfa Laval valves
- Siemens or Allen Bradley control equipment
- Accuracy milk standardisation 0.02g/100g
- Accuracy cream standardisation 0.15g/100g
- Test procedure according to standard distribution
  - 68.2% of samples within +/- 0.020g/100g
  - 95.4% of samples within +/- 0.040g/100g
  - 99.7% of samples within +/- 0.060g/100g
- Test to be conducted under stable process conditions
- Milk temperature 45-65 degrees Celsius
- Ambient temperature 0-30 degrees Celsius
- Power supply 240 VAC
- Control panel protection degree IP 55

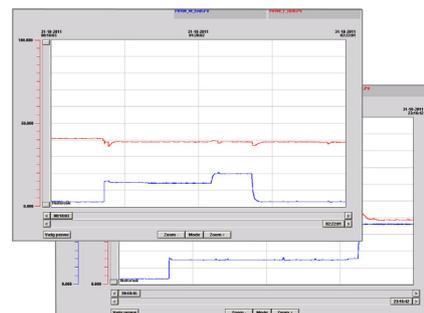
## Au2mate MASStermate standardisation unit, system architecture



## Au2mate MASStermate standardisation unit



P&I DIAGRAM STANDARDISATION UNIT



TREND CURVES STANDARDISATION UNIT