

Tetra Vertenso™ beverage production solutions

# The cutting edge in cutting costs

Tetra Therm® Aseptic Drink



# Cuts that count

## Greater sustainability for your business – and the environment

**T**etra Therm Aseptic Drink is a beverage pasteurizer that can help you achieve huge cuts in water consumption, energy consumption and product loss. Thanks to cutting-edge technology, you get much lower production costs, while also cutting environmental impact. That's why we call it the cutting edge in beverage processing.

### **Double hot-water circuits**

Double hot-water circuits enable individual control of the flows in the heating and heat recovery sections. So you can keep a high flow – and thus a good heat transfer coefficient and low delta T, giving you the best heat recovery. Which means major energy savings – and a lower environmental load. And you have great flexibility in terms of what products you can run, what pressures you can use and how to optimize your CIP.

### **Special balance tank design**

Product/water is introduced directly into the product pump for simultaneously filling the balance tank from below. This assures an undisturbed flow and prevents the introduction of air during changeovers between water and product.

### **Deaerator cooling**

The deaerator cooling-coil system can be configured as a closed circuit, so you can choose the best cooling medium and get a high, even flow with no risk of pressure shocks or product contamination. And the savings in water consumption are amazing – as much as 3,000 litres per hour, in a 10,000 l/h capacity unit. Think what this can mean in terms of annual savings!

The deaerator cooling circuit can be complemented with a vacuum pump that requires no sealing water, thus cutting your water consumption by another 600 litres per hour.

### **Product return recovery**

In conventional systems, if you stop your filling line, all product already in the return line from the filling machine can be lost. Tetra Therm Aseptic Drink is available with a return recovery system that uses compressed air to push product from the filler back to the balance tank, so product loss here is greatly reduced. A simple calculation can show you how much product – and money – is at stake.

## Tetra Therm Aseptic Drink – the hardware

*Deaerator cooling system  
– major water reduction,  
no risk of contamination*

*Double hot-water circuits  
– cut energy consumption  
and environmental impact*

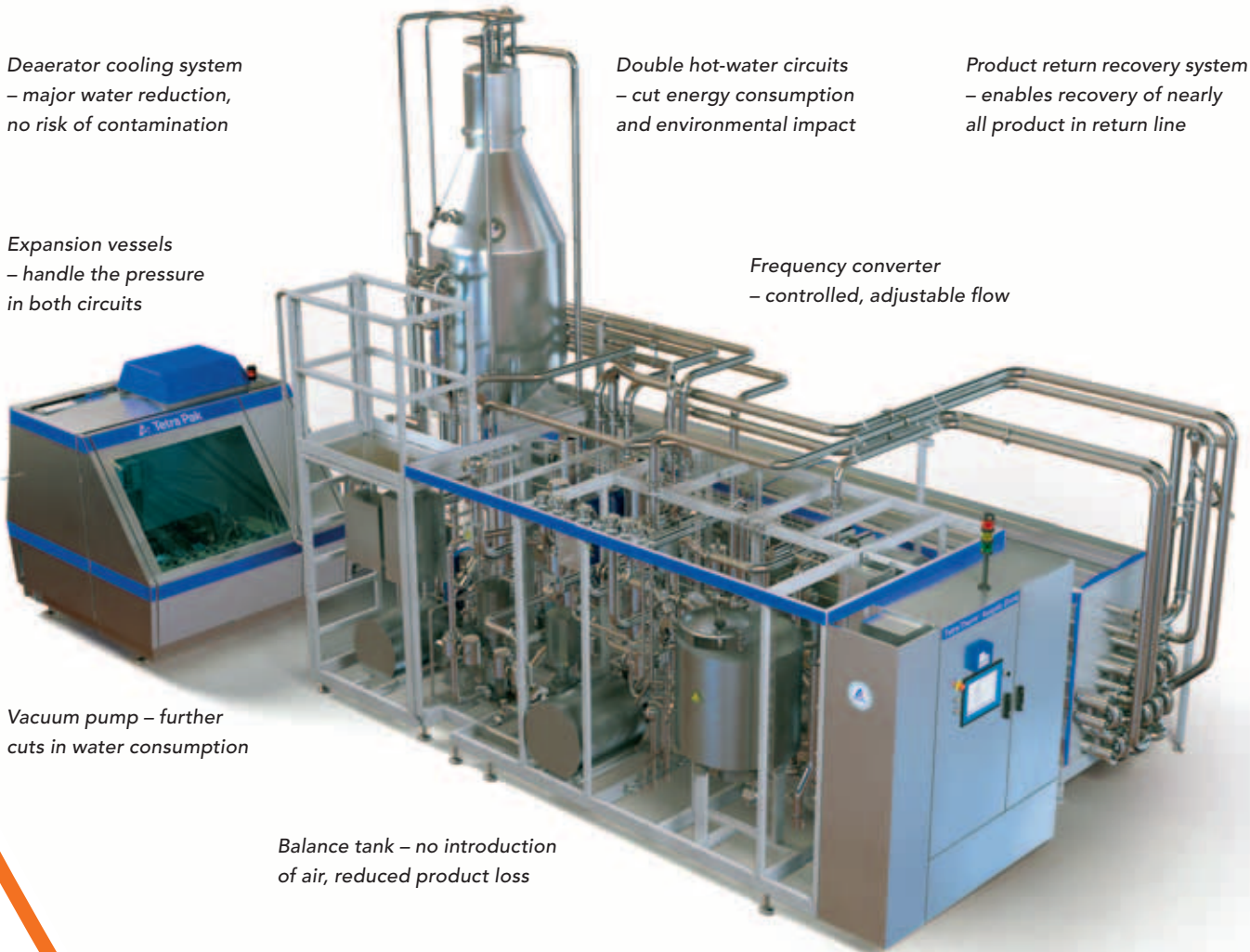
*Product return recovery system  
– enables recovery of nearly  
all product in return line*

*Expansion vessels  
– handle the pressure  
in both circuits*

*Frequency converter  
– controlled, adjustable flow*

*Vacuum pump – further  
cuts in water consumption*

*Balance tank – no introduction  
of air, reduced product loss*



# Unique human-machine interface

## The cutting edge in beverage processing automation

The technology breakthroughs in hardware make significant cuts in your water and energy consumption, as well as product loss. But the unique human-machine interface (HMI) of the new Tetra Therm Aseptic Drink unit takes performance to a whole new level – putting you in complete control and nearly eliminating the risk of human error.

### IntelliMaintenance

This HMI tool enables you to survey your maintenance needs, customize maintenance intervals and file reports for maintenance history. With IntelliMaintenance, you can cut the number of stops for maintenance. And perhaps more importantly, you can virtually eliminate those costly unplanned stops.

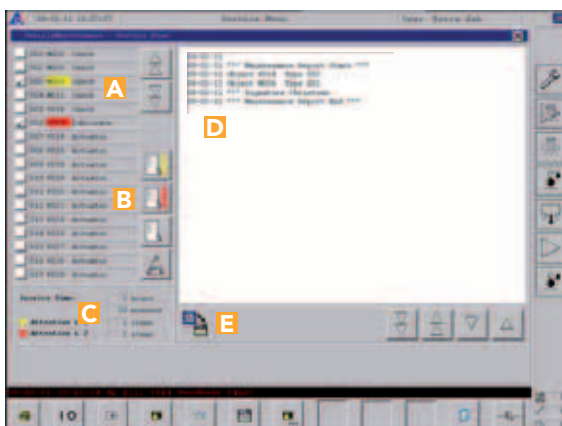
### Performance deviation alarm

We have also developed an integrated automatic performance deviation alarm that alerts the operator in case of any excessive deviation in production or product parameters. You thus keep on track in terms of utility consumption and product flow, as well as your unique product recipe parameters.

This greatly reduces the risk of human error, allowing you to respond to any deviation at once, before things get out of hand and product becomes off-spec and is lost. So it saves you money both in your production efficiency and your product quality. And not only today, or this week or for this run. We're talking about optimized performance throughout the entire life-cycle!

### Tetra PlantMaster compatibility

The new Tetra Therm Aseptic Drink unit is also fully compatible with Tetra PlantMaster – the food industry benchmark for plant automation. With its open architecture platform, Tetra PlantMaster gives you full reporting and traceability functions that enable continuous improvements, as well as a perfect interface with other Tetra Pak equipment and systems, including packaging lines, to follow up your entire process. This further cuts the risk of human error and also gives you full traceability – with unit history, batch control and a review of all actions.



### The IntelliMaintenance view

- A. Objects requiring service are checked and colour-coded.
- B. Three attention levels identify the urgency.
- C. The total service time is also displayed.
- D. The maintenance report is generated.
- E. The report can be saved to an external memory when a USB memory stick is inserted.

# Improved environmental performance

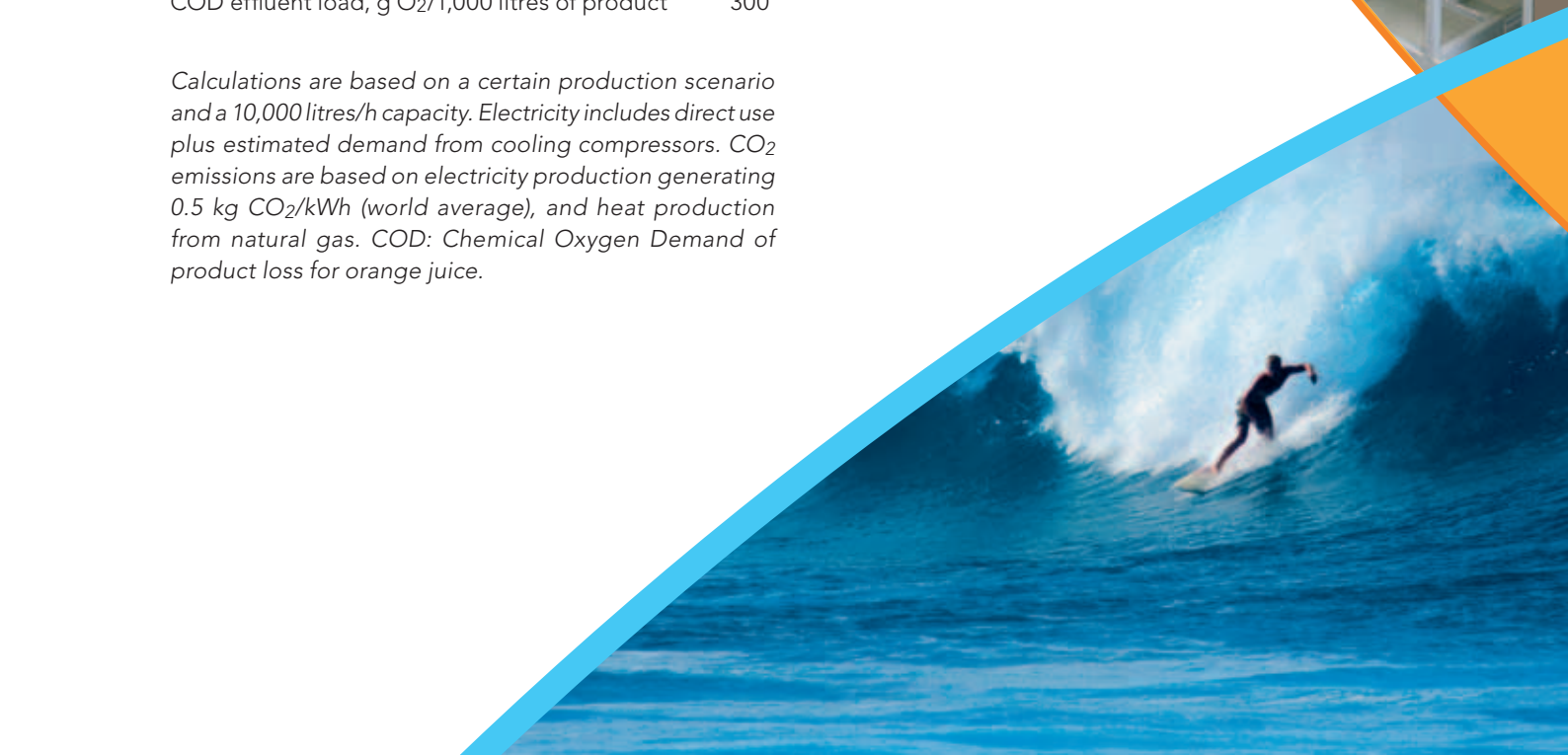
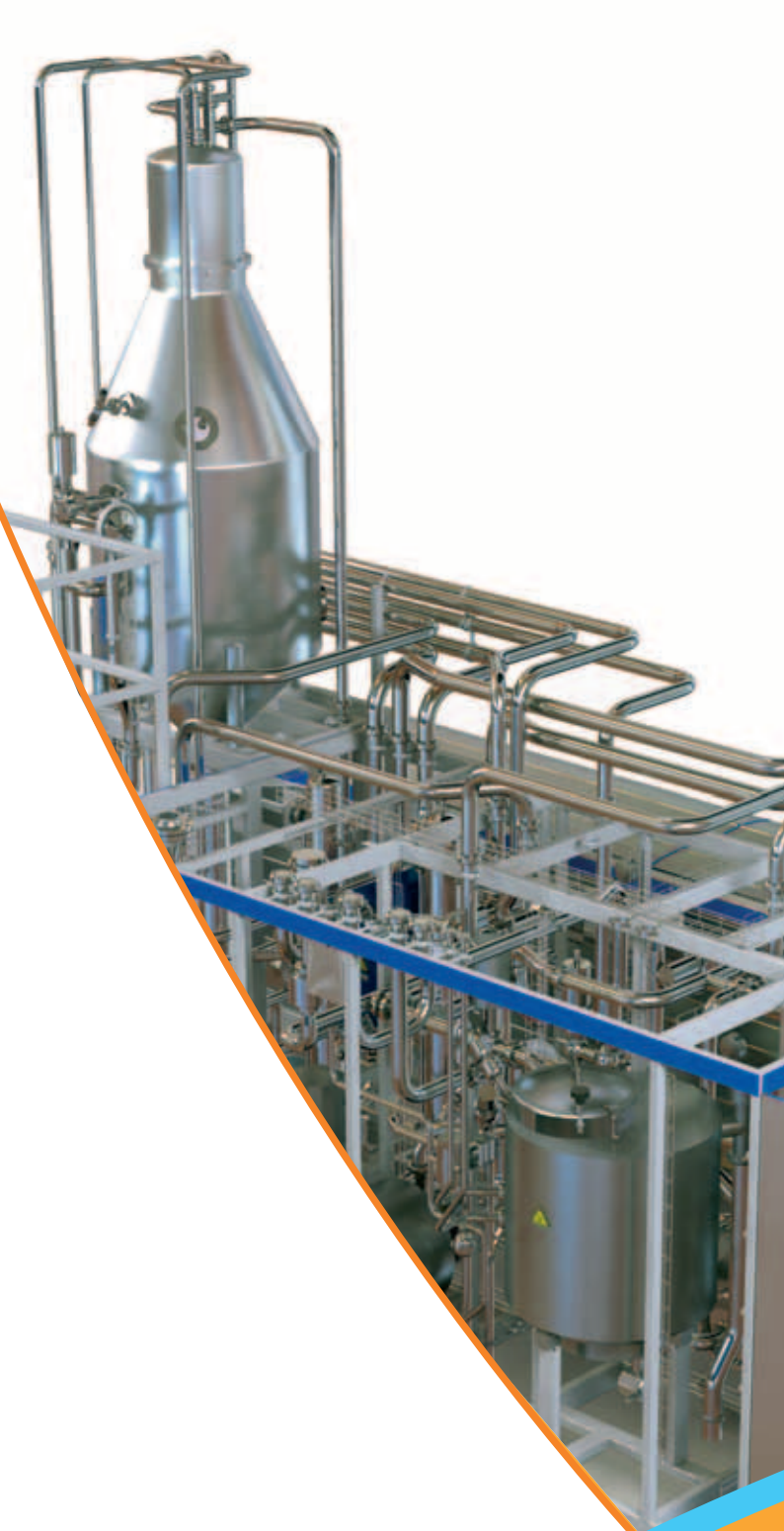
A very important objective for our development work is to design solutions that combine maximum production efficiency with minimum environmental impact. This certainly applies to Tetra Therm Aseptic Drink. Compared to its predecessor, water consumption is reduced by up to 80%, product loss and effluent load cut by 32%, and carbon footprint reduced by 7%.

*“The savings in water consumption are amazing – as much as 3,000 litres per hour, in a 10,000 l/h capacity unit.”*

## Environmental indicators

Electricity, kWh/1,000 litres of product	5.6
Heat energy, kWh/1,000 litres of product	22.1
Carbon footprint, kg CO <sub>2</sub> /1,000 litres of product	7.2
Fresh water, litres/1,000 litres of product	48
Product loss, litres/1,000 litres of product	2.3
COD effluent load, g O <sub>2</sub> /1,000 litres of product	300

*Calculations are based on a certain production scenario and a 10,000 litres/h capacity. Electricity includes direct use plus estimated demand from cooling compressors. CO<sub>2</sub> emissions are based on electricity production generating 0.5 kg CO<sub>2</sub>/kWh (world average), and heat production from natural gas. COD: Chemical Oxygen Demand of product loss for orange juice.*



# Life-cycle performance

## Cutting-edge production solutions

Tetra Therm Aseptic Drink is a great example of Tetra Pak's outstanding beverage production solutions – a concept we call Tetra Vertenso. Tetra Therm Aseptic Drink units raise the bar for the entire beverage industry with cutting-edge standard features plus a wide range of options (see table) that can be configured to match your product and production needs – and give you great flexibility for the future.

Whatever combination you choose will enable you to significantly cut your energy and water consumption, as well as your product loss. The results will not only give you a short payback time and exceptional operating economy, it will also reduce your environmental impact into the bargain.

### **Name your capacity**

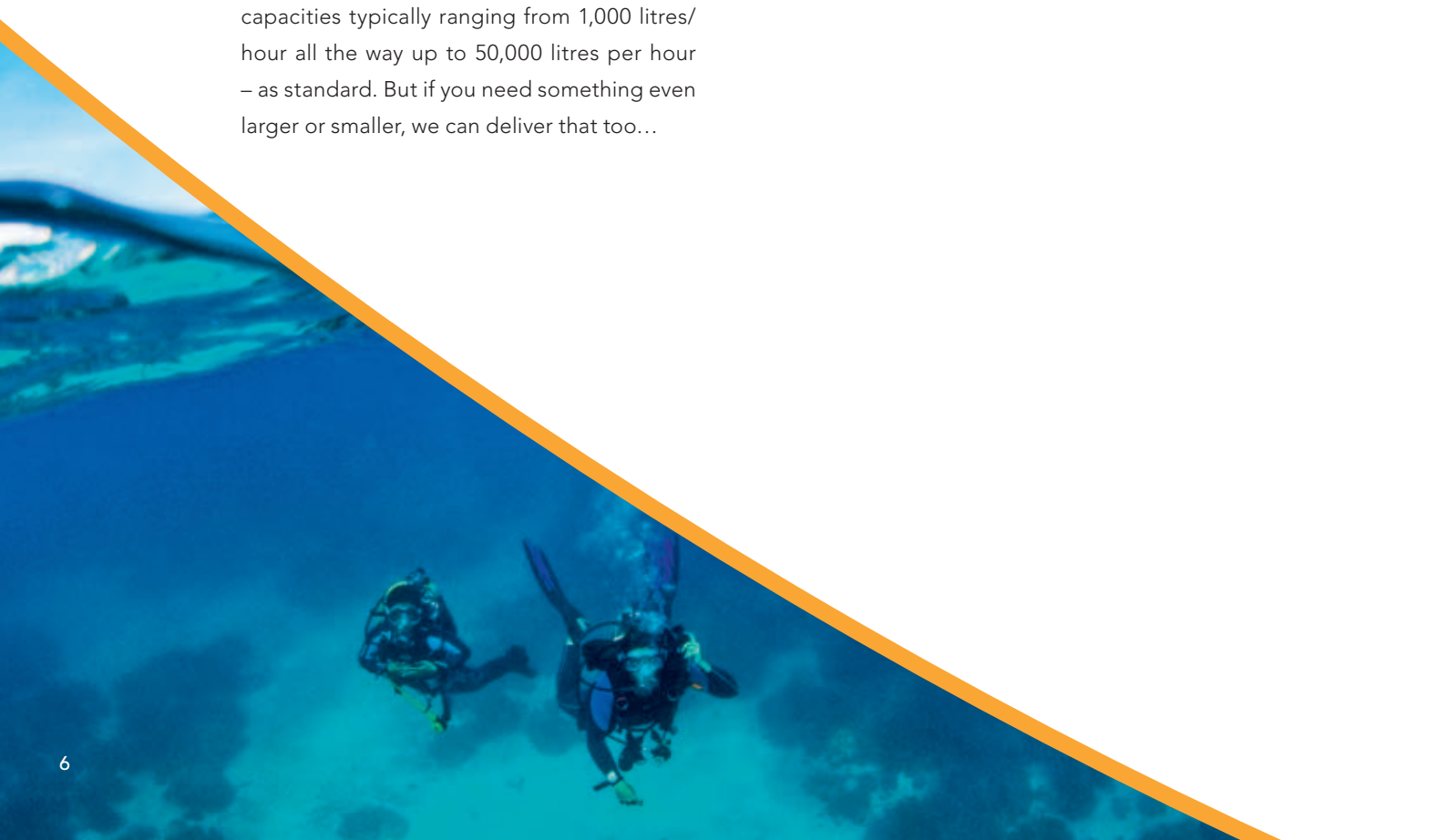
And what about capacity? Tetra Therm Aseptic Drink production solutions are available in capacities typically ranging from 1,000 litres/hour all the way up to 50,000 litres per hour – as standard. But if you need something even larger or smaller, we can deliver that too...

### **Throughout the life-cycle**

Tetra Therm Aseptic Drink delivers cutting-edge performance and intelligent beverage processing in so many ways. But we are not just talking about the first year of operation. We mean the entire life-cycle. So all those cuts in product loss, energy consumption and water consumption are not only going to save you money in the short term and give you a short payback time. Your unit is going to go on saving you money – and saving the environment – for many years to come. And there's just one more thing...

### **Performance guarantee**

We don't only promise to take you to a new level of cost-efficient production. We guarantee what we deliver. And most importantly – Tetra Pak honours its guarantees!



## Tetra Therm Aseptic Drink – the cutting edge in beverage processing

### Standard features

Double hot-water circuit  
(tubular heat exchangers)

### Benefits

- cuts energy consumption
- cuts environmental impact
- increases production flexibility

Balance tank

- cuts product loss

Data collection tool

- enables Tetra Pak to give you faster trouble-shooting

### Optional features

Closed-circuit deaerator cooling

### Benefits

- cuts water consumption
- eliminates risk of contamination

Vacuum pump

- cuts water consumption

Aseptic hibernation

- cuts energy consumption
- cuts product loss

Flexible CIP

- increases production flexibility

IntelliMaintenance

- cuts risk of human error
- cuts downtime

Brix supervision

- cuts product loss

Sorting of water/product/  
detergent at balance tank

- cuts utility consumption
- cuts product loss

Control of mix phases

- cuts product loss

Monitoring of utility consumption

- cuts utility consumption

ECO-mode

- cuts energy consumption
- cuts environmental impact

Performance deviation alarm

- cuts energy and water consumption
- cuts product loss
- increases plant efficiency
- assures top life-cycle performance

Tetra PlantMaster

- increases operating efficiency
- gives full traceability

**Capacities: typically 1,000 – 50,000 litres/hour  
(even larger or smaller on request)**



