Application Description
AG/FB108-EN

Control of a Solids-Containing Flow in an Enzyme Production Process Using an I/P Converter

Food & Beverages

Instrumentation Solutions

- Undisturbed control using I/P converters
- No blocked valves
- Avoidance of plant downtimes

ABB Instrumentation

1 General description and problem

In an enzyme production plant the process fluids contain cellulose particles with a size of approx. 8 mm. When the valve is quickly settled, it may be blocked. This effect occurs in conjunction with positioners.

2 Solution

An I/P signal converter is used for controlling the position of a small diaphragm valve with 15 mm stroke. This valve controls the flow in a range of 50 to 2000 liters/h and with an accuracy of +/- 3 ... 5 liters/h.

The used “open-loop” I/P signal converter TEIP11-PS provides for quick control on the setpoint side, but responds rather slowly on the process value side. As a result, short-time position deviations of the valve caused by cellulose particles passing the valve remain unconsidered.

This ensures that the valve is not blocked, even when it is opened only a little bit.

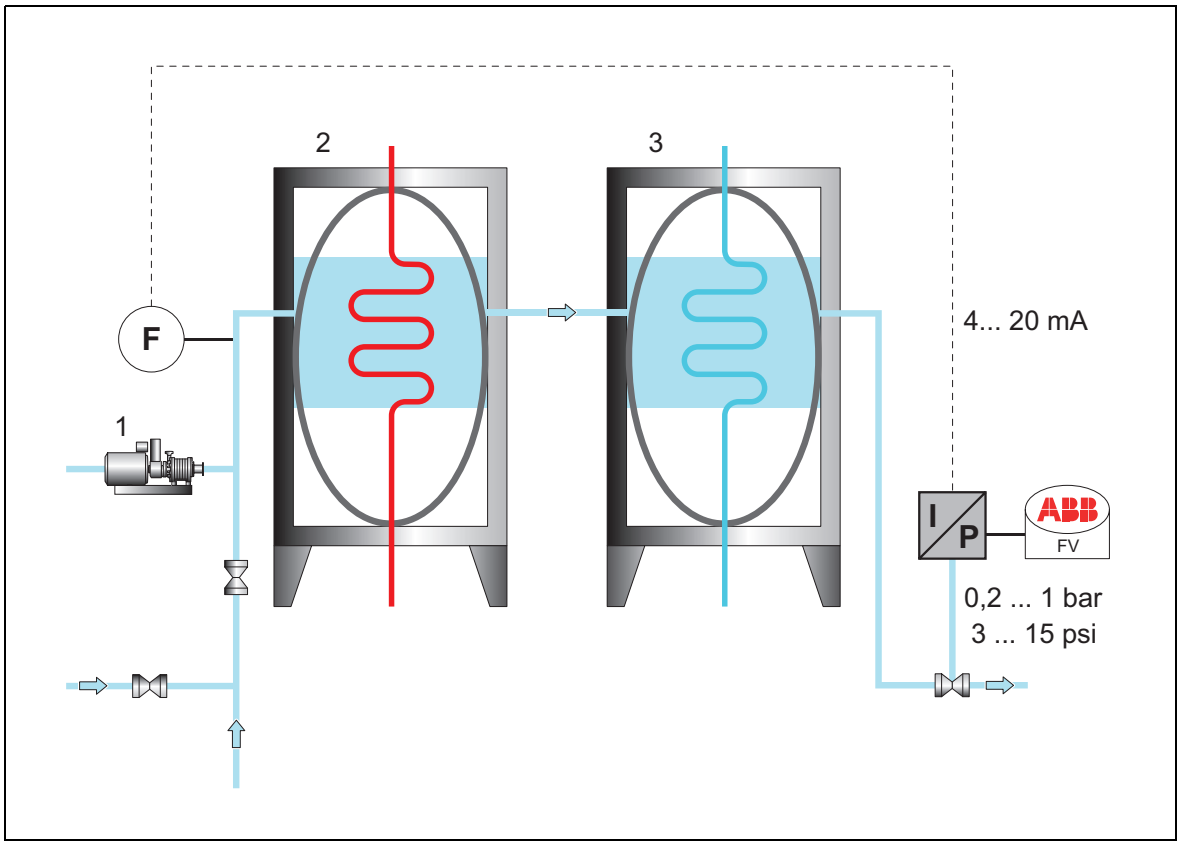

Bild 2-1: Schematic diagram of a solids-containing flow using an I/P signal converter

1 Pump
2 Heating
3 Cooling

3 Benefit analysis

The reduction of unplanned plant downtimes results in a decreased loss of production. Cost savings combined with an increased plant availability are the benefits.

4 Features of the used components

Tag	Instrumentation	
FV		**I/P signal converter TEIP11-PS** • Input signal: 4 ... 20 mA, Output signal: 0.2 ... 1 bar (3 ... 15 psi) • Robust IP 65 field housing • High functional stability

ABB has Sales & Customer Support
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www.abb.com/instrumentation

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

Printed in the Fed. Rep. of Germany (03.2008)

3KDE010026R3001

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