Solvent Transfer System

To ensure safe batch transfer of multiple solvents accurately

Objective

Many chemical industries carry out batch transfer of solvent and chemicals. The multiple solvents required are transferred to the process in sequence. To save costs, a common solvent transfer system with fixed outlet connection and inlet connected to multiple solvent tanks via isolation valve or done manually by changing flexible hose connection to different tanks is used.

The solvent needs to be transferred accurately as the variation in transfer of each solvent may result in a cumulative error. Hence, a special mass flow meter with batching valve and batch controller which can work with different solvents without being affected by deviation in temperature and density of solvents is used. The readings provided are of the true quantity of solvent being transferred.

The system is controlled by the batch controller which commands the batching valve to immediately stop the transfer once set batch is transferred. A separate remote emergency stop is located near the tank, which can be operated to stop the batch remotely in case of emergency. The batch controller can be connected to a remote monitoring system for data recording and batch reporting.

Benefits

Improves product consistency and plant efficiency

Flexibility of generating various reports for maintenance management, planning and process optimisation

Specific safety interlocks to maximise plant safety

Project documentation for complete automation package

Case Study

Initial Problems

Manual transfer of fluid and closing of valves depended on manual readings. Various factors like delay in valve operation, density variation, inaccurate readings, etc. affected the quality of the final product.

Root Cause

Delay in manual valve operation

Improper sizing of meter

Density variation for different solvents

Solution

Forbes Marshall designed and supplied an economic system comprising of a coriolis flowmeter, batching valve and batch controller integrated together for accurate solvent transfer. The system is specially designed for batch applications. It can be used on multiple solvents.

The batch details and report can be retrieved on the central SCADA through communication with the batch controller.

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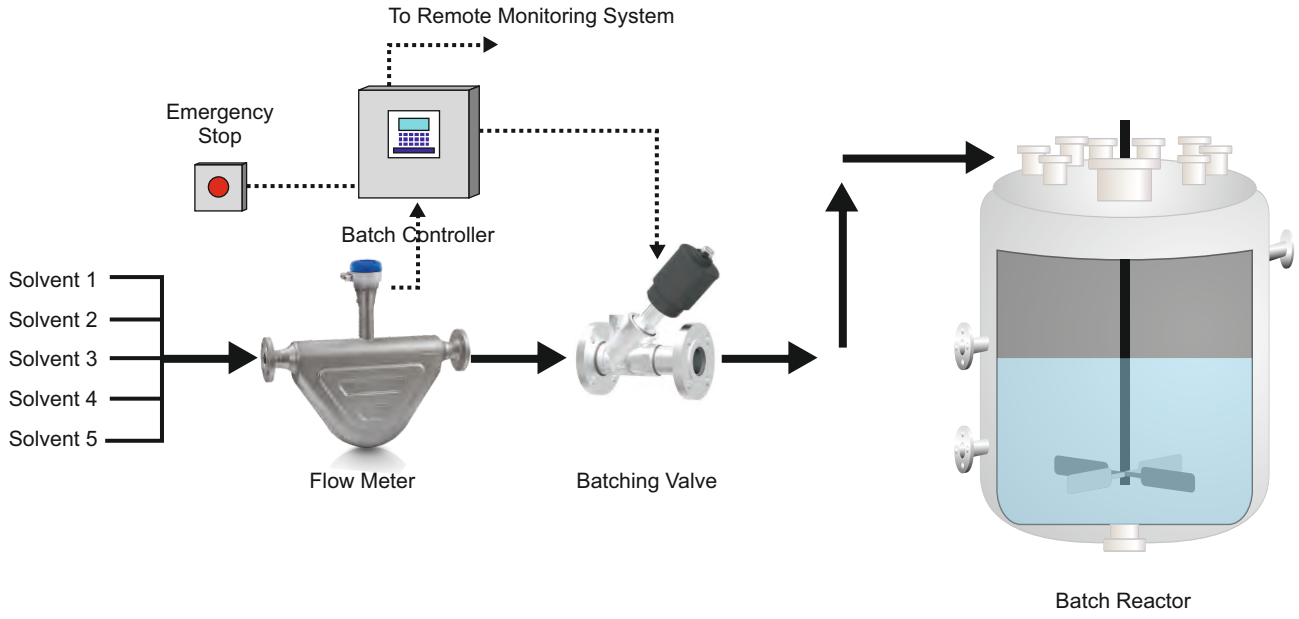

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