

Water & Waste Water

Instrumentation Solutions



- One contact
- Complete solution
- Cost-effective
- Reliable
- Easy-to-use

1 Typical Arrangement of Effluent Flow Monitoring System

Fig. 1-1 shows a typical arrangement of an effluent flow monitoring system.

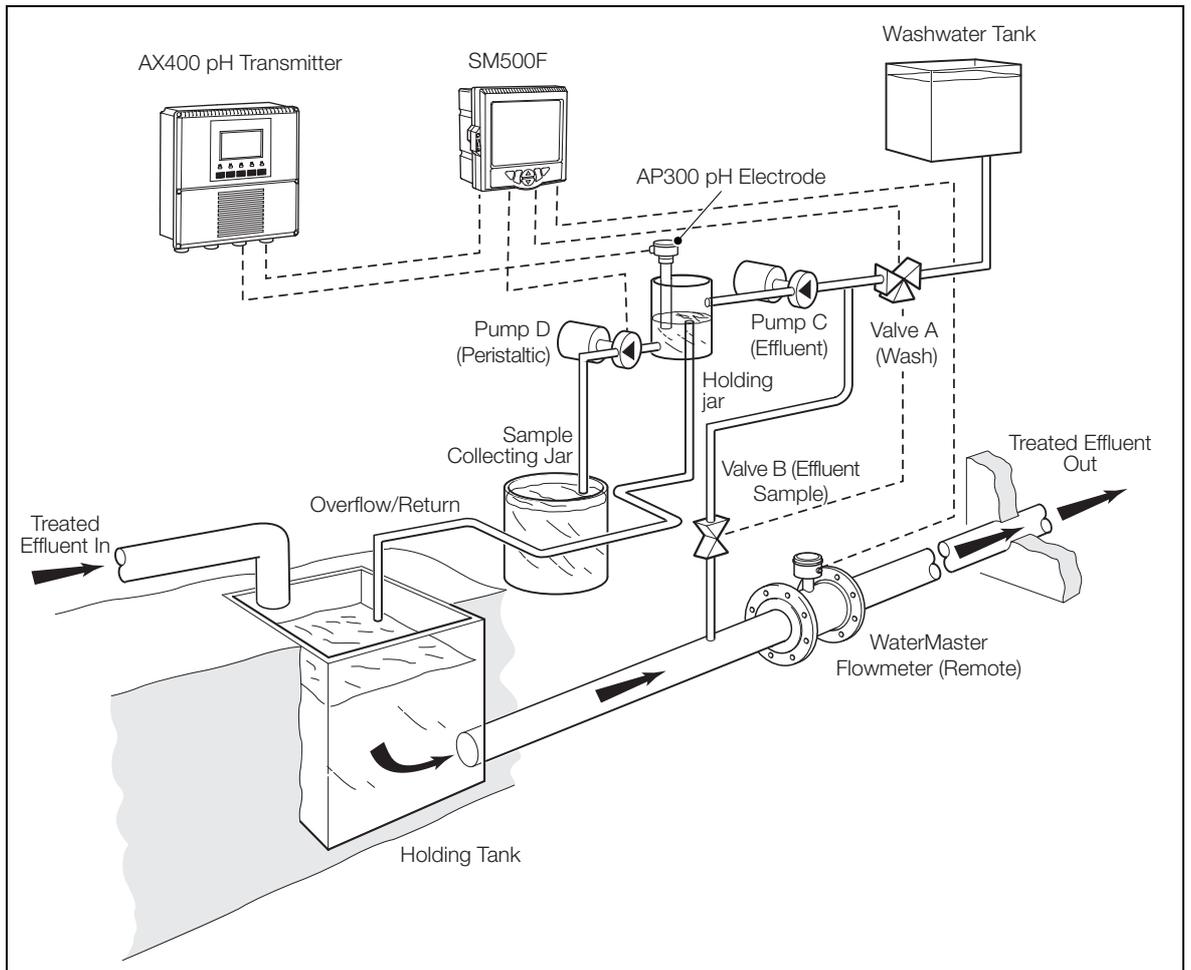


Fig. 1-1: Typical Arrangement of Effluent Flow Monitoring System

2 Why use an Effluent Flow Monitoring System

Any plant that has to discharge liquid waste needs to prove to the relevant authorities the chemical content and volume discharged.

In the system illustrated (above), a sample is taken every 50m³ of effluent and the pH of that sample is recorded along with the flowrate.

The sample is pumped into a collecting jar to allow further analysis. To avoid cross contamination, the sampling system is automatically purged at regular intervals.

3 Why use ABB Instrumentation

- ABB are in a unique position to provide all the different monitoring equipment – pH indicators, flowmeters, with recorders to trace the data and control the sampling and purge sequence.
- Simple controls allow the system to operate with minimal input from site personnel.
- Flexible design allows easy system modification to suit changes in the site condition.
- Proven reliability – over 100 years of process instrumentation experience.

4 What ABB Products are Suitable

- SM500F process recorders:
 - 24 comms. channels (with 8 recording channels)
 - flow totalization as standard (the daily total flow can be printed)
 - programmable sampling and purge sequencing
 - MODBUS TCP communications facility, provides full integration with on-site control systems
 - alarms on pH and flow levels can be set to print messages on the chart
- AX400 pH Transmitter.
- AP300
- WaterMaster flowmeters:
 - suitable for a wide range of effluent flows
 - extremely accurate measurement
 - high turndown ratio

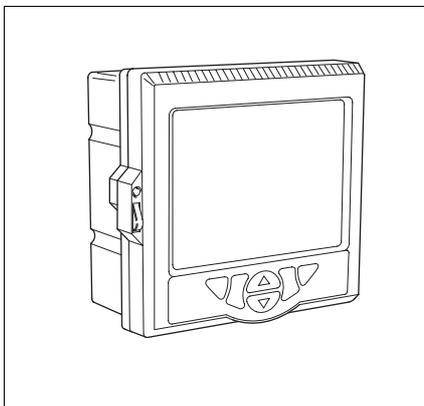


Fig. 4-1: SM500F Process Recorder

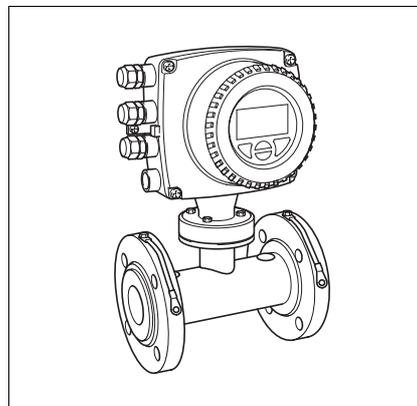


Fig. 4-2: WaterMaster Flowmeter (Integral)

5 Installation Considerations

- Location of the measurement points of flow and pH may vary. This could change the specification of the pH and flow sensors.
- Site conditions may restrict the volume of effluent discharged from the plant each day. If so, it would be necessary to add a control loop to the system.
- The sampling/purge sequence can vary, but the flexibility of the SM500F logic equations and sequencing will meet most installation requirements.

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