Steam Control for Coatings Process & Clean Room

At YMF Ome factory, two boilers distribute steam to warm 60 coating tanks for base board and to humidify a clean room. To control these processes, flow rate is always fluctuating about 100 to 850 kg/h. This factory had controlled only amount of steam consumption, but they changed their way of control by digitalYEWFLO for energy savings and more effective steam operation.

Process Specification
Model: DYO40-DALAJ1-0D
Fluid: Sat. Steam
Flowrate: 0～850kg/h
Temp.: 164.4°C
Press.: 0.6MPa

Grasp exactly the amount of steam distribution and Use it the best.

digitalYEWFLO has developed not only for high accuracy or endurance but also for cost saving or energy saving. The result of this case proves that digitalYEWFLO will contribute to energy-savings and cost savings for customers.

Advantages of digitalYEWFLO
☆ No Start-up Tuning ► Initial Cost Saving
☆ No Moving Parts ► No Regular Maintenance
☆ High Accuracy ► Vibration proof
☆ Low Pressure Loss ► Energy Saving
☆ Wide Rangeability ► Energy-Savings
☆ Improved Self-Diagnostic function ► the predictive maintenance
☆ Tough Body ► High Temperature Steam
Keep the stable output for fluctuation of steam providing.

SSP (Spectral Signal Processing function) which digitalYEWFLO has in the new amplifier, always watch the flow condition and keep the optimal adjustment for the stable output.

Fluctuating Flow

Vortex Signal

Pulse Signal

Approx.160kg/h (10m/s)  Approx.838kg/h (52m/s)  Approx.642kg/h (40m/s)

This table shows compared accuracy of Orifice (2 to 5%) and digitalYEWFLO(1%) for steam application, and calculated saving steam energy cost per year.

*The Orifice “3%” means antecedent value under considering error of fluctuation.

<table>
<thead>
<tr>
<th>Item</th>
<th>digitalYEWFLO</th>
<th>Orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>±1% of reading</td>
<td>±3% of reading (ave)</td>
</tr>
<tr>
<td>Size</td>
<td>40mm</td>
<td></td>
</tr>
<tr>
<td>Flowrate</td>
<td>850kg/h</td>
<td></td>
</tr>
<tr>
<td>Steam loss by Error (kg/D)</td>
<td>850x0.01x24x=204</td>
<td>850x0.03x24x=612</td>
</tr>
<tr>
<td>Steam loss by Error (90%Operation) (kg/yr)</td>
<td>204x365x0.3=7014</td>
<td>612x365x0.3=201.042</td>
</tr>
<tr>
<td>Money Loss (Steam@24ºC)</td>
<td>67014x24ºC=1,608k$</td>
<td>201042x24ºC=6,825k$</td>
</tr>
<tr>
<td>Saving Cost (Year)</td>
<td>3%~1%</td>
<td>4,825$~1,608=3,217k$</td>
</tr>
</tbody>
</table>

The process in which fluid fluctuates drastically, digitalYEWFLO can contribute save-energy by stable output and high accuracy.

NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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