

API-Cecom Group *n'fo*

Technical & Application Notes

Application: Monitoring drainage doors

Type Of company: Public Utility

Location: Illinois

Problem: The customer is treating sewage. Sewage is created by residences, institutions, hospitals and commercial and industrial establishments. Raw influent (sewage) includes household waste liquid from toilets, baths, showers, kitchens, sinks, and so forth that is disposed of via sewers plus, sewage also includes liquid waste from industry and commerce. Conventional sewage treatment involves three stages, called *primary*, *secondary* and *tertiary treatment*. The process is designed so that the final water product can be discharged into a stream, river, bay, lagoon or wetland, or it can be used for the irrigation of a golf course, green way or park. If it is sufficiently clean, it can also be used for groundwater recharge or agricultural purposes.

Note: For additional information on wastewater treatment see http://en.wikipedia.org/wiki/Sewage_treatment

The customer has a requirement to accurately control the position of the valve that controls the drainage doors during the treatment process and integrate this information into the Emerson Process (formerly Fisher/Rosemount) Delta V plant control system. Since each drainage door has different opening characteristics the customer must be able to modify the analogue output signal for the unit in the field. The problem is compounded by the fact that the unit must be small enough to install in the valve actuator housing and is in a high temperature, environmentally challenging environment.

Solution: The customer purchased the field programmable Kinax 2W2. The Kinax 2W2 gives the customer an accurate and repeatable linear 4-20mA signal for the valve position that can be interfaced with the plant control system. This allows the operators to control how much the drainage doors are opened or closed at a given time to better control water flow. Since the Kinax 2W2 is only 1.95 inches in diameter and 1.10 inches in depth it is small enough to be installed in the actuator housing plus it has excellent temperature stability with no drag on the valve gearing.




[Kinax 2W2](#)



Benefits of API's solution:

- Accurate monitoring and control of drainage doors
- Very cost effective
- Use a standard product that is field programmable
- Rugged with long operating life

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TCI-20090702