

API-Cecom Group *n'fo*

Technical & Application Note C127

Application: Monitoring vacuum on diesel engines
Type Of company: Public Utility
Location: Arizona

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

During the treatment process the customer has a requirement to use diesel engines running on methane gas. If the engines are run under positive pressure they will malfunction and it will be a costly maintenance issue so they have a requirement to monitor the manifolds on each engine. The manifold vacuum should be approximately 15 inHg vacuum. The customer wants to get a signal to their DCS so they can monitor the vacuum for erosion and/or wear on the engine seals and sound an alarm to shutdown the engines before the engines run under positive pressure.

Solution: The customer purchased an F16L30inHgVAC. The F16L gives the customer both a visual indication and a 4-20 mA signal to send to their PLC for both data logging and alarming.



F16L

2-Wire Programmable Loop powered
Digital Pressure Transmitter



Benefits of API's solution:

- Accurate monitoring of vacuum
- Re-transmission to controlling device
- Rugged operation
- Use a standard product

Cecom Unique Feature



Functional Test Pushbutton

The Functional Test Pushbutton will, when pressed, output a test signal independent of the applied pressure/vacuum. This signal is adjustable from 0-100% of span by holding the Test button down and adjusting the Test potentiometer on the unit. This signal is typically preset to 50% at the factory. This feature allows the technician to temporarily inject a test or preset calibration signal into the output loop without manipulating the input signal. This signal can be used to check loop status, downstream display operation, downstream alarm operation, etc.

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