Gas generator health monitoring

- Application note for FLEETlog2
The initial situation

In addition to mining, construction, and earth moving equipment, a world-leading construction machine and gas machine manufacturer offers gas-powered electric generators. These generators are used in all parts of the world, mainly in remote areas which require local electrical power generation for factories, hospitals, or utility plants. The generators are in operation 24/7 and customers rely heavily on them.

The challenge

To guarantee a very high reliability of the power generator system, the company developed a monitoring concept based on a data logger with remote communication capabilities. The overall objective was to record process data as well as the ECU communication and implement an intelligent alarm management and live notification system to immediately report any technical problems of the system via the internet and thereby avoid unplanned system downtimes.

Customer requirements:
- Ruggedized data logger for harsh temperatures and environments
- Signal measurement of ECUs based on the J1939 and CCP protocol
- On-board math functions for statistic calculations
- Integrated logical operations to trigger status e-mail notifications in case of alarm conditions
- Automatic transfer of data files with system key performance indicators and CAN traffic measurements
The solution

The manufacturer chose IPETRONIK’s data logger FLEETlog2 for this complex logging application. This data logger is very small and suitable for harsh environments. It supports a wide range of online static functions to determine the system’s overall health status. Due to the online surveillance of alarm limits and trigger conditions, the supervisor in the central control room is constantly kept informed about any system problems. The e-mail and SMS alarm notifications include static data files and error descriptions to enable an immediate identification of the problem. The data files including full CAN traffic recordings are automatically transmitted in case of problems. The supervisor in the central control room can directly investigate root causes, inform local staff and recommend actions.

The advantages

The FLEETlog2 data logger provides a complete remote monitoring and online alert functionality:

- ECU measurement via J1939 and CCP protocols covering over 700 channels
- On-board math and logical functions to compute statistics and trigger alarm notifications via e-mail and SMS
- Full CAN traffic recording (event-triggered)
- Multiple storage groups to organize data
- Worldwide wireless access via modem communication
- Small ruggedized hardware able to handle harsh ambient temperatures and humid environments
- Cost-effective solution