

Emissions Monitoring System for EM-200E

Introduction

Monitoring of emissions in underground mining is critical to the health and safety of employees working in these environments. Governments and industry are implementing aggressive policies and procedures to ensure the safest possible conditions for these workers. The Ontario government introduced legislation in January of 2012 to ensure reliable and repeatable exhaust testing for underground diesel equipment (Ontario Reg 854, Section 183.2). The legislation requires employers to conduct regular emissions tests on underground vehicles and make historical records of these tests available for audit. When linked with remedial actions taken in the event of threshold violations, the test records and work orders form a complete history of compliance to the legislation and actions taken to ensure a safe environment. When used as part of a preventative maintenance program, the “pre-inspection” test can be an early indicator of potential problems requiring remedial action, thus avoiding costly downtime of equipment during planned maintenance procedures.

Drager Safety and Pattern Discovery Technologies have partnered to deliver a solution to meet these requirements. Utilizing state-of-the-art portable gas measurement technology available in Drager’s high precision EM-200E gas measurement device, technicians can now perform emission tests in the field without the need to drag along portable computers or other devices to facilitate the test. **EmissionInsight** communicates directly with the EM-200E to download equipment lists to be tested including the results of the previous test for reference in the field. Once tests are completed, the results can be uploaded via a simple USB connection on a networked computer for further analysis and reporting. Historical tests are displayed in tabular and graphical format for trends or conditions that may warrant additional action. Reports can be generated for distribution or attachment to work orders.

EmissionInsight can act as a standalone product but it has been architected to interface with a variety of front end and back end systems. With the appropriate IT infrastructure, equipment information can be obtained from existing asset management systems and the results can be stored in corporate database structures.



Features of EmissionInsight:

- Select equipment to be tested from a dropdown menu of available equipment or schedule a task list of equipment to be tested at a future date.
- Review equipment identification, description and previous test results prior to deployment.
- Deploy list of equipment to be tested to EM-200E by connecting the device to the computer USB port.
- Scroll through equipment list on the EM-200E and select appropriate equipment for testing. The unit will display a record of the previous test results (for reference by the testing technician).
- Perform multiple tests and capture results without the need for additional computing equipment in the field.
- Collect test results from the EM-200E by re-connecting to computer USB port.
- Review tests results and add additional information for correlation to work order and technician records and any comments that may be appropriate for next actions. Tests that exceed established thresholds are highlighted for additional mandatory input (comments optional for tests that fall within normal range).
- Commit tests to a database for archival and retrieval.
- Display results of historical tests and graphically view trends and threshold violations
- Generate .pdf reports for distribution or attachment to work orders

Architecture:

