

## PKN ORLEN SA

### CASE STUDY

## 1.0 | About the system

The system is designed to monitor leaks from the CFC (freon) circuit at Tatoray and Isomar plants on the area of the Manufacturing Plant PKN ORLEN S.A. in Plock. Concentration of R507 refrigerant gas is measured by equipment that takes samples of air at appointed locations of the plants according to a predefined sequence.

## 2.0 | Our solutions

The system for detection of R507 refrigerant gas (freon) is based on the gas detector RapidGas Multi R507 provided with ten measuring channels and designed to measure concentration of the gas in atmospheric air by means of the method based on aspiration sampling of air at various locations. Owing to flameproof enclosure such a detector can be operated in areas with potentially explosive atmospheres. Samples of atmospheric air are taken at desired locations and then a pump embedded into the detector transfer the samples via dedicated lines to a gas sensor designed in the infrared (IR) technology. The sensor measures concentration of the agent and samples are released back to the ambient atmosphere. The measurements are taken one after another according to a specific sequence, individually for each channel at a time.



## 3.0 | Problems of the customer to be remedied:

The plant needed installation of a system to detect and measure leaks of CFC (freon) gas in areas with potentially explosive atmospheres by means of detectors deployed at plurality of locations.

Since the system proved to be really large and sophisticated, the key requirements of the Customers included:

- fast operation of the system with easy calibration of detectors,
- short time of the system response with feedback information from measurements of gas concentration,
- high degree of the system reliability.