



The toxic and combustible gases in boiler rooms are potentially dangerous and can undermine safety if leaks occur. Eliminate the guesswork with Honeywell Analytics' complete mechanical room solution.

A building's mechanical room is the hub of its heating, ventilation and air conditioning (HVAC) system. This can include central utility plants, boiler and chiller rooms, mechanical and electrical rooms and fuel rooms. The equipment within these rooms have the potential to leak harmful combustible or toxic gases, including costly and environmentally harmful refrigerant gases.

Boiler Room Monitoring

Monitor your mechanical room's boiler equipment to ensure an adequate supply of combustion air and to help reduce the build-up of a flammable gas concentration. Working as a stand-alone system or networkable to your existing equipment, compliance couldn't be more reliable.

Complete Boiler Room and Plant Gas Detection System



Sensepoint® XCD
Toxic, combustible & oxygen gas detector & transmitter

The Sensepoint XCD transmitter provides comprehensive monitoring of combustible, toxic and oxygen gas hazards in potentially explosive atmospheres — and is marked by installation ease and user-friendly operation.

Honeywell | Analytics

CALL OR VISIT OUR WEB SITE FOR THE PRODUCT SOLUTION TO MEET YOUR NEEDS
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Boiler Room Standard Installation



Boilers Standard Installation

Step 1: Ventilation

The prime objective for boiler room ventilation is to ensure an adequate supply of combustion air. It can also help reduce the build-up of a flammable gas concentration; however, this cannot be guaranteed, which is why gas detection systems are so widely used.

Step 2: Detection system

A gas detection system consists of a number of strategically located sensors hard wired to a control panel. Upon the detection of gas, alarm relay contacts within the control panel are used to activate audible and visual alarms. Should the gas concentration reach a higher level, a second set of contacts are used to remove the power to an electrically operated solenoid valve fitted to the gas supply line. (See Figure 6.)

Another option is to use gas sensors that provide an output suitable for direct interface to a Building Management System (BMS). The BMS then cuts the gas supply and switches off any potential ignition sources.

Step 3: Gas sensors

Catalytic Bead Sensors are less prone to false alarms than Solid State or Semi-Conductor sensors, which are affected by changes in ambient temperature and humidity. The best catalytic bead detectors are 'poison resistant' which offer a longer operational life, typically 3-5 years or more.

Gas fired boiler rooms are usually designated as a 'safe area' (i.e., not requiring hazardous area certified

equipment). However, it is considered good practice to use certified gas sensors to remove the possibility of the sensor being the source of ignition. This permits the operation of the gas sensors when all other potential ignition sources have been switched off at the second or higher alarm level.

Honeywell Analytics produces gas sensors certified to the latest Class I, Div. 1 or applicable regulations.

Step 4: Location of gas sensors

Natural gas is lighter than air; therefore, gas sensors should be located over potential leak areas. These include:

- The gas burner assembly
- The gas train assembly
- The pressure boosters (if fitted)
- The gas shut-off valve
- The combustion air intake
- The gas meter

On a small gas boiler installation a number of these points may be close together requiring a single point of detection. On installations using large shell type boilers (as in hospitals, factories or large blocks of flats), it may be necessary to install one detector over each of these areas.

Consideration must be paid to mechanical ventilation and its likely effect upon the path of leaking gas when locating a gas sensor.

For installations using Liquefied Petroleum Gas (LPG), which is heavier than air, gas sensors would need to be mounted near to the floor or in pipe and cable ducts.

Step 5: Location of control equipment

Most gas detection control panels are not certified for use in hazardous areas and should be mounted away from the gas installation, ideally outside the boiler room to ensure gas readings can be checked prior to entry.

Control panels are available in a number of mechanical configurations for ease of application, these include:

- Din rail mounting for inclusion with other plant control panels
- all mounting
- Rack mounting

An alternative power supply in the event of power failure is also good practice and battery back-up systems are also available.

References:

EN50073:1999 Guide for selection, installation, use and maintenance of apparatus for the detection and measurement of combustible gases or oxygen.

BS EN61779-1:2000 electrical apparatus for the detection and measurement of flammable gases – Part 1: General requirements and test methods.

EN60079 Series, Electrical Apparatus for use in explosive atmospheres.

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