Gas detectors are used to detect potential hazardous atmospheres in the environment, such as explosive gases and vapours. Explosion protection is extremely important when dealing with flammable gases and vapours and this especially applies not only to equipment used in these areas, but also to the gas detectors themselves. Since gas detectors are categorised as electrical equipment, they must fulfil the relevant requirements for operating in potentially explosive areas. Within the European Union, this is regulated by using the relevant harmonised European Directives. ATEX (Explosive atmospheres) is French for potentially explosive atmosphere. According to the ATEX manufacturer directive 94/9/EC (ATEX 95) and user directive 1999/92/EC (ATEX 137) the electrical safety of all electronic gas detectors and personal monitors used in potentially explosive atmospheres must be tested and marked "ATEX" (EN 60079-0 et seq.). If the gas detector for flammable gases and vapours is used as a safety device "with a measuring function for explosion protection" it must be performance approved by a notified body in addition to the "ATEX" marking. Correspondence with other globally accepted standards (e.g. wheel mark approval) must also be ensured during the construction of the electrical equipment.

At MSA, we work tirelessly to build smarter, better gas detectors which people around the world can rely on.

**Legal marking indicating that the equipment conforms to the requirements of the European Directives**

- **Equipment group and category**
  - **Gas zone**
  - **Dust zone**
  - **Equipment category**
  - **Group**
  - **Hazardous area characteristics**
  - **Ex d ia mb IIC T4 Gb**
  - **ATEX marking**
  - **Ex d ia mb IIC T4 Gb**
  - **ATEX marking**
  - **Intrinsic safety**
  - **Safety concept**
  - **Type of protection**
  - **Gas detectors**
  - **Electrical equipment**
  - **Equipment category**
  - **Equipment group**
  - **Equipment category**

**Ingress Protection (IP) code to EN 60529**

- **Protection type**
  - **Protection against solid objects**
  - **Protection against water**

**Performance Approval**

According to the ATEX manufacturer directive 94/9/EC and the ATEX user directive 1999/92/EC, any gas detection system (detectors and controller) and any personal monitor for flammable gases, if used as safety device to avoid dealing with explosion risk, must be performance approved. Performance approval is also required if the oxygen content of the air during immersion or the concentration of toxic gas needs to be measured.

The CE marking indicates that the equipment conforms to the requirements of the European Directives. The equipment must fulfil certain specifications and be equipped with a performance certificate. The CE marking is placed on the equipment by the manufacturer and is also marked on a label or on the equipment itself. The equipment must also be accompanied by a technical file that contains the information necessary to ensure that the equipment meets the requirements of the directive.

**Type of explosive atmosphere**

- **Gas, mist, vapour**
- **Dust**

**Equipment group and category**

- **Gas zone**
- **Dust zone**
- **Equipment category**
- **Group**
- **Hazardous area characteristics**

**Equipment protection level (to EN 60079-26)**

The level of protection assigned to equipment based on the risk of becoming a source of ignition and disturbing the differences between explosive gas atmospheres.

**Temperature classification**

- **Electrical equipment of Group II is divided into temperature classes based on its maximum surface temperature.**
- **Temperature classification per IEC, CENELC/E and NEC 505.**

**Temperature classification per IEC, CENELC/E and NEC 505**

- **Temperature maximum permissible class**
  - **Surface temperature**
  - **T1**
  - **T2**
  - **T3**
  - **T4**
  - **T5**
  - **T6**

**Select the appropriate instrument**

- **ALTAIR GALAXY GX2**
- **ALTAIR PRO**
- **ALTAIR 4X**
- **ALTAIR 5X (IR)**
- **SIRIUS**

**Explosive Atmosphere Zones:**

- **Zone 0**
- **Zone 1**
- **Zone 2**

**Intrinsic safety module**

- **Intrinsic safety module**
  - **SIL 1**
  - **SIL 2**
  - **SIL 3**

MSA Europe • Phone: +49 (30) 6886-0 • E-mail: info.de@MSAsafety.com