CASE STUDY

PROCESS

PVC dust monitoring in packaging areas for early warning of hazardous dust concentrations

APPLICATION

At a PVC powder manufacturing site, robots are used in the packaging plant to fill 25 kg bags. The company's ATEX guidelines state that there is an ATEX Zone 22 in the area of 5 metres around the plant. The ignitable mixture of PVC powder is 50 g/m³, which can happen if a bag does not withstand the pressure and breaks when being filled by a robot. However, by the time the system recognises this and internally switches off the filling, several kilos of material have often escaped into the ambient air, resulting in a potentially explosive atmosphere [> 50 g/m³].

PROCESS DATA

Customer:	Manufacturer of PVC powder
Material:	PVC powder
Installation:	In the packaging plant
Function:	Dust monitoring to give early warning of potentially hazardous dust concentrations

SOLUTION

In the application described, two AirSafe 2 sensors were used for continuous monitoring of the ambient air. In this case, a unit suitable for use in ATEX Zone 22 was used.
The two relay contacts of the evaluation units of both sensors are connected in series, whereby the filling is switched off as soon as one of the sensors exceeds the preset alarm threshold and thus detects a bag break.
The switching point has been calibrated far below the ignitable mixture, so that a reliable shutdown of the system can be ensured in case of a broken bag and thus released dust quantities.
The AirSafe 2 is basically used to monitor dust concentrations in buildings, production halls, silo enclosures, boiler houses or workplaces.

AirSafe 2

CUSTOMER BENEFITS

- Possible dust leakage from plant components is quickly detected
- Dust concentrations that could potentially endanger employees are detected early and reliably
- Monitoring of applications in Zone 22
- Early plant shutdown in case of imminent danger

Monitoring for Powder, Dust & Gas

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