



Ex-protection: what changes has ATEX caused?

Since 1 July 2003, only goods that comply with the new Directive 94/9/EG (ATEX), and the other relevant standards, can be marketed for potentially explosive areas. This has brought about a range of changes for producers and customers.

The aim of the new directive is to ensure the free movement of these products within the European Union. Taking the differing international conditions into account has led to numerous amendments, the most important of which are described below.

Clear delineation of responsibility

The allocation of products to categories is new. This has clearly separated the sphere of responsibility of the customer (whose application must be assigned to a zone) and that of the device producer (whose product must meet the requirements of the particular category). Customers define their potentially explosive area (e.g. Zone 1) and then select a device from the corresponding category (2G in this case).

Producer's responsibility	Customer's responsibility				Definition (94/9/EG). Potentially explosive atmosphere exists:	Certifiable through
	Suitable for use in zone (gas)	Also suitable for use in zone (gas)	Suitable for use in zone (dust)	Also suitable for use in zone (dust)		
1G / 1D	0 (0)	1 and 2	20 (10)	21 and 22	Permanently or long-term or frequently	Notified bodies
2G / 2D	1 (1)	2	21 (11) Zone 22 "conductive dust"	22	Occasionally	Notified bodies
3G / 3D	2 (2)	-	22 "non-conductive dust" (no comparable zone)	-	Rarely and short-term	Producer or notified bodies

G = gas, **D = dust**; () = old designation in brackets

Customer must be more specific about "dust"

Customers will be particularly surprised about the effect of the new directive regarding "dust". After a detailed examination, some applications will now have to be assigned to Zone 22. For customers, this means that the standard devices used up to now may no longer be employed. Furthermore, in Zone 22 it is necessary to determine whether the application involves conductive dust (e.g. metallic dust: Category 2D devices required) or non-conductive dust (e.g. grain: Category 3D devices required).

Regular Exi-audits in production areas

In addition to the EC-type examination certificate for devices, certification of the "Production" quality assurance system is now necessary for the production of Category 1 and 2 devices as a supplement to ISO 9001. For customers this guarantees consistently high product quality, and continuous back-tracing of products from the customer, through production and back to the suppliers.

Categories 3D and 3G require special devices

The directive 94/9/EG (ATEX) no longer permits the use of standard devices with producer declarations for Zone 2 and Temperature Class T4. Category 3G/3D devices, that can be used in Zones 2 and 22, must conform to the new requirements. Their protective measures are no longer based on intrinsic safety, but on the waterproofing and impact immunity of the housing. This mechanical protection must be proved by means of impact assessments and bumping tests, among other measures.

Overview of ATEX sensorics from SICK

Category	Industrial Sensors				Safety Systems
	Photo-electric switches	Inductive proximity sensors	Magnetic proximity sensors	Magnetic cylinder sensors	Safety light curtains
1G	---	---	---	---	---
1D	---	---	---	---	---
2G	W.24Exi	IM08 IM12 IM18 IM30	MM12 MM18	MZR2 MZZ1 MZP3 MZP4	---
2D	---	---	---	---	---
3G	W.27-2 (special)	---	---	MZT6	C 4000 Standard/ Advanced, Entry/Exit (selected types)
3D	W.27-2 (special)	---	---	MZT6	C 4000 Standard/ Advanced, Entry/Exit (selected types)

Accessories: EN2Ex isolating switch amplifier: the intrinsically safe electric circuits of the isolating switch amplifier are suitable for Zones 0, 1, 2, 20, 21 and 22. The device itself may not be installed in Zones 0, 1, 2, 20, 21 and 22.