



Explosion-protected equipment are designed such that an explosion can be prevented when they are used properly.

The explosion-protected equipment can be designed in accordance with various types of protection.

The **local** conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types of protection and therefore into possible equipment (product) types.

Our product range contains motors in the following types of protection:

- “Increased safety” Ex e II
- “Explosion-proof enclosure” Ex de IIC/Ex d IIC
- “Non-sparking” Ex nA II
- “Areas protected against dust explosions in Zones 21 and 22”

The table below “Overview of explosion-proof motors” contains a complete overview of our products, their types of protection and the assignment of motor types to categories. It is important to note that depending on whether the motor is used for converter-fed operation or mains-fed operation, different order codes are required for unique selection of the required product.

In many industrial sectors as well as in domestic life, explosion protection or explosion hazards are ever-present, e.g. in the chemicals industry, in refineries, on drilling platforms, at petrol stations, in feed manufacturing and in sewage treatment plants.

The risk of explosion is always present when gases, fumes, mist or dust are mixed with oxygen in the air in an explosive ratio close to sources of ignition that are able to release the so-called minimum ignition energy.

Overview of explosion-proof motors

Section	Category	Zone	Frequency of occurrence of the Ex atmosphere	Degree of protection	Temperature class	Degree of protection	Standard	Motor type (Pos. 1-4 of Order No.)	Operation	Order code	Utilization according to temperature class
Gas and Fumes (G)	1G	0	Continuously or long-term	Not common practice with low-voltage motors							
	2G	1	Infrequently	Ex de IIC ¹⁾ (explosion-proof enclosure)	T1 – T4	IP55	IEC/EN 60 079-0 IEC/EN 60 079-1	1MJ6/7	Mains	–	130 (B)
								Converter	A15 A16	155 (F)	
			Ex e II (increased safety)	T1 – T3	IP55	IEC/EN 60 079-0 IEC/EN 60 079-7	1MA6 1MA7	Mains	–	130 (B)/ 155 (F)	
	3G	2	Rarely or briefly	Ex nA II (non sparking)	T1 – T3	IP55	IEC/EN 60079-15	1LA6	Mains	M72	130 (B)
								1LA7 1LA8, 1PQ8 ²⁾ 1LA9 1LG4/6	Converter	M73	
Dust (D)	1D	20	Continuously or long-term	Not common practice with low-voltage motors							
	2D	21	Infrequently	Conductive and non-conductive dust	Max. housing temperature T 125 °C	IP65	IEC/EN 61241	1LA5	Mains	M34	130 (B)
								1LA6 1LA7	Converter	M38	
	3D	22	Rarely or briefly	Non-conductive dust		IP55		1LA8 ³⁾ , 1PQ8 ²⁾	Mains	M35	
1LA9 1LG4/6								Converter	M39		

¹⁾ Highest explosion group IIC includes IIB and IIA.

²⁾ 1PQ8 is not possible for Zones 21 and 22; Zone 2 for 1PQ8 available on request. Utilization according to temperature class 155 (F).

³⁾ 1LA8 only available for Zone 22 (order codes M35, M39). Utilization according to temperature class 155 (F).