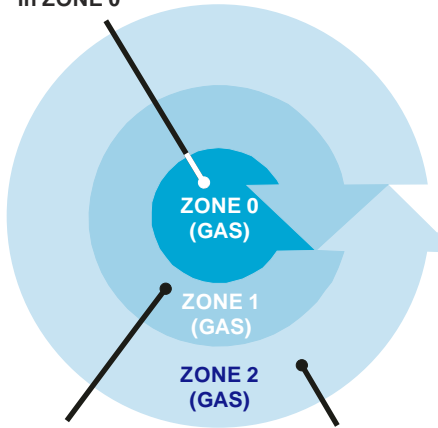


Electric Motors for **GAS** Explosive Atmospheres

To ATEX 94/9/EC & 1999/92/EC Directives

No motors can be installed in ZONE 0



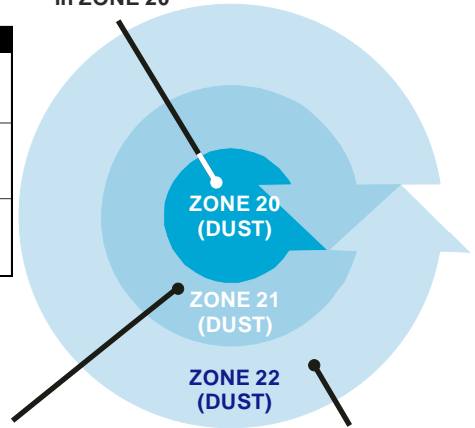
GAS		DUST	
Zone 0	Explosive Gases present continuously	Zone 20	Explosive Dust Atmosphere present continuously
Zone 1	Explosive Gases likely to occur in normal service	Zone 21	Explosive Dust Atmosphere likely to occur in normal service
Zone 2	Explosive Gases unlikely to occur and would be infrequent and short term	Zone 22	Explosive Dust Atmosphere unlikely to occur and would be infrequent and short term

G - gas symbol		D - dust symbol	
Zone 0	Category 1G	Zone 20	Category 1D
Zone 1	Category 2G	Zone 21	Category 2D
Zone 2	Category 3G	Zone 22	Category 3D

- ⒸⒺ...Ⓜ II 2G Ex-d, Ex-d(e)
- ⒸⒺ...Ⓜ II 2G Ex-e
- ⒸⒺ...Ⓜ II 2G Ex-d, EEx-d(e)
- ⒸⒺ...Ⓜ II 2G Ex-e
- ⒸⒺ...Ⓜ II 3G Ex-nA

Electric Motors for **DUST** Explosive Atmospheres

No motors can be installed in ZONE 20



- ⒸⒺ...Ⓜ II 2D IP65
- ⒸⒺ...Ⓜ II 3D IP55 (non-conductive dust)
- ⒸⒺ...Ⓜ II 2D IP65 (conductive dust)

CE **123** **Ex** **II 2G Ex de** **II C** **T1 to T4**

- CE**: CE Marking
- 123**: Notified Body (Testing Authority) Identification number
- Ex**: Specific marking of explosive protection
- II 2G**: G- Gas symbol
Zone 0 - Category 1G
Zone 1 - Category 2G
Zone 2 - Category 3G
- Ex de**: Ex - Explosion protection
d - Flameproof to EN 50018
e - Increased safety to EN 50019
nA - Non-sparking to EN 50021
de - Flameproof motor with Increased safety Terminal box EN 50018&19
- II C**: Gas Group
II General
IIA Propane, etc
IIB Ethylene, etc
IIC Hydrogen, etc
- T1 to T4**: Temp Class Max Surface Temp
T1 450°C
T2 300°C
T3 200°C
T4 135°C
T5 100°C
T6 85°C

Equipment Group: I-Mining Application, II-Non-mining Application

CE **123** **Ex** **II 2D T125°C**

- CE**: CE Marking
- 123**: Notified Body (Testing Authority) Identification number
- Ex**: Specific marking of explosive protection
- II 2D**: D- Dust symbol
Zone 20 - Category 1D
Zone 21 - Category 2D
Zone 22 - Category 3D
- T125°C**: Max Surface Temp
T = 125°C
T = 100°C

Equipment Group: I-Mining Application, II-Non-mining Application

"Ex" protection in North America (Comparison of zones and divisions)

GAS	FM/UL	Class I Division 2	Class I Division 1	
	ATEX	Ex Zone 2	Ex Zone 1	Ex Zone 0
DUST	FM/UL	Class II Division 2	Class II Division 1	
	ATEX	Ex Zone 22	Ex Zone 21	Ex Zone 20

IEC (International Electrotechnical Commission)- Europe
NEMA (National Electrical Manufacturing Association)- North America

The UL (Underwriters Laboratories) or the FM (Factory Mutual) in the USA and the CSA (Canadian Standards Association) in Canada test and issue approvals for the equipment that has been developed and manufactured for use in hazardous areas.