

Motors Classification Standard

a) Classification of areas

Classification of Hazardous Areas (GAS AND VAPOURS)

Zone 0: Environment where an explosive atmosphere is present continuously or for long periods or frequently

Zone 1: Environment where an explosive atmosphere is likely to occur in normal operation occasionally

Zone 2: Environment where an explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only

b) Protection types

- ✓ Ex d(e) flameproof
- ✓ Ex nA non-sparking
- ✓ Ex e increased safety
- ✓ Ex p pressurized

c) Sub-Group Classification for Explosive Atmospheres

Sub-Group Classification for Gases of Explosive Atmospheres

GROUPS	Underground Explosive Atmospheres	Equipment manufactured for underground operation mines	I	Methane may be present (firedamp)
	Other Explosive Atmosphere	Equipment manufactured for other types of industry (surface industry), being subdivided based on the characteristics of the materials present	IIA	acetone, ammonia, benzene, butane, butanol, alcohol butylic, ethane, ethanol, acetate of ethyl, gasoline, heptanes, hexanes, natural gas, methanol, naphtha, propane, propanol, toluene, esthirene, solvents in general
			IIB	acetaldeide, cyclopropane, diethylic ether, ethene, monoxide of carbon
			IIC	acetylene, butadiene, oxide of ethene, hydrogen, oxide of propylene, gases containing over 30% of hydrogen

d) Classes of temperature

Class of Temperature	T1	T2	T3	T4	T5	T6
Ignition temperature of the explosive mixture C	>450	>300	>200	>135	>100	>85

e) Ingress Protection

This Symbol is named as IP□□, which the first number shows ingress protection of motor against dusts clouds, and the second number shows ingress protection of motor against water

IP..	First digit: Ingress of solid objects	Second digit: Ingress of liquids
0	No protection	No protection
1	Protected against solid objects over 50mm e.g. hands, large tools.	Protected against vertically falling drops of water or condensation.
2	Protected against solid objects over 12.5mm e.g. hands, large tools.	Protected against falling drops of water, if the case is disposed up to 15 from vertical.
3	Protected against solid objects over 2.5mm e.g. wire, small tools.	Protected against sprays of water from any direction, even if the case is disposed up to 60from vertical.
4	Protected against solid objects over 1.0mm e.g. wires.	Protected against splash water from any direction.
5	Limited protection against dust ingress. (no harmful deposit)	Protected against low pressure water jets from any direction. Limited ingress permitted.
6	Totally protected against dust ingress.	Protected against high pressure water jets from any direction. Limited ingress permitted.
7	N/A	Protected against short periods of immersion in water.