

Ex-Marking for Ex-Protection

Based on ATEX Directive 2014/34/EU and IEC International Standards

Classification of Hazardous Locations					
Flammable medium	Hazardous Locations Probability of a potentially explosive atmosphere occurring	Classification of hazardous locations	Product Classification		Equipment Protection Level (EPL)
			Product Group	Product Category	
Gases, Mists, Vapours	Continuously, for long periods or frequently	Zone 0	II	IG	Ga
	Likely to occur	Zone 1	II	2G	Gb
	Infrequently and for short periods only	Zone 2	II	3G	Gc
Dusts	Continuously, for long periods or frequently	Zone 20	II	ID	Da
	Likely to occur	Zone 21	II	2D	Db
	Infrequently and for short periods only	Zone 22	II	3D	Dc

Types of Explosion Protection				
Protection Principle	Type of Protection	Code	Standards by EN & EC	To use in Zone
Low current / voltage supply	Intrinsic Safety	Ex ia/ib/ic	EN 60079-11	0, 1, 2 20, 21, 22
Prevent high temperature & sparks	Increased Safety	Ex e	EN 60079-7	1, 2
Positive pressure device	Pressurization or purging	Ex p Ex pD	EN 60079-2	1, 2 21, 22
Prevent transmission of explosion outside	Non-Sparking or Non-incendive	Ex n	EN 60079-15	2
Prevent transmission of the explosion outside	Flameproof Enclosure	Ex d	EN 60079-1	1, 2
Isolating parts from explosion atmosphere by immersing them in oil	Oil Immersion	Ex o	EN 60079-6	1, 2
Prevent transmission of explosion outside	Powder filling	Ex q	EN 60079-5	1, 2
Dust explosion proof	Protection by housing	Ex t	EN 60079-31	20, 21, 22

II 2G Ex ib IIC T4 Gb
 II 2D Ex ib IIIC T130°C Db

Ex ib IIC T4 Gb
 Ex ib IIIC T130°C Db

Official Institutes	
Code number	Institute Notified Body (NB)
0102	PTB (Germany)
0035	TÜV Rheinland

Classification of Explosion Groups & Temperature Classes										
Group	Gas	Ignition Temperature (°C)	Temperature Class (°C)							
			T1-450	T2-300	T3-200	T4-135	T5-100	T6-85		
I	Methane									
	Acetone	540	✓							
	Acetic Acid	485	✓							
	Ammonia	630	✓							
	Ethane	515	✓							
	Methylene Chloride	556	✓							
	Methane (CH ₄)	595	✓							
	Carbon Monoxide	605	✓							
	Propane	470	✓							
	n-Butane	365		✓						
	n-Butyl	370		✓						
	n-Hexane	240			✓					
	Acetaldehyde	140				✓				
	Ethyl Ether	170				✓				
II	Ethyl Nitrite	90							✓	
	Ethylene	425		✓						
	Ethyl Oxide	429-440		✓						
	Hydrogen Sulphide	270			✓					
	Acetylene (C ₂ H ₂)	305		✓						
	Carbon Disulphide (CS ₂)	102							✓	
	Hydrogen (H ₂)	560	✓							

Code	Dust Classification
IIIC	Conductive Dust
IIIB	Non-Conductive Dust
IIIA	Flammable Fibres