



ATEX / IEC

Example marking

ATEX certificate number **DEKRA 20 ATEX 0105 X**

EU type-examination certificate

ID no.	Notified body	Country	IECEx-certified Ex equipment	Year of certification	ATEX-certified Ex equipment - guidelines of the European Union	Certificate number
0539	UL International Demko A/S	UL DK				
0102	PTB	PTB DE				
0044	TÜV Nord	TUN DE				
0080	INERIS	INE FR				
0344	DEKRA CERTIFICATIONS B.V.	DEK NL				
1180	BASEEFA	BAS UK				

Additional conditions

ID	Conditions
X	Suffix denotes special condition of use contained in the certificate.
U	Suffix denotes Ex component approval. The equipment is not suitable for installation without further evaluation.

IECEx certificate number **IECEx DEK 20.0062 X**

ATEX / IECEx / UKEX Marking

Example marking

Equipment marking **UK CA CE 0344 Ex II 2 G Ex db IIC T4 Gb**

*Complies with UKCA requirements

Conditions in potentially explosive areas ATEX 2014/34/EU

Explosive Atmosphere	Presence of explosive atmosphere	Zone Classification	Equipment group	Equipment category	EPL
Coal Mines	Parts at coal mines endangered by firedamp and/or combustible dust	I	M1	M1	Ma
Gas Vapor Mist	Continuous, long periods, frequent	Zone 0	II	1G, (1)G	Ga
	Occasional	Zone 1	II	2G, (2)G	Gb
Dust Fibers Flying	Continuous, long periods, frequent	Zone 20	II	1D, (1)D	Da
	Occasional	Zone 21	II	2D, (2)D	Db
	Normally not, only for a short period	Zone 22	II	3D, (3)D	Dc
	Use in the defined Ex area	1G category		M1	Continuous operation in explosive atmosphere
	Associated apparatus. Transmits to or receives signal from Ex area.	(1)G category		M2	No operation in explosive atmosphere

Gas and dust groups

Typical gas / dust	Identification
Methane	I
Propane	II A
Ethylene	II B
Hydrogen	II C
Combustible flyings	III A
Non-conducting dust	III B
Conducting dust	III C

Ex identification acc. to standard (example)

[Ex ia Ga] IIC	EN/IEC 60079-0	Associated apparatus. Transmits to or receives signal from Ex area.	[] Associated equipment
[Ex ia] IIC	EN/IEC 60079-0	Installation in Ex area	Equipment
Ex ia IIC T6 Ga	EN/IEC 60079-0		
Ex ia IIC T6	EN/IEC 60079-0		

Protection types (ATEX / IECEx / UKEX)

Protection method	Type	Zones	Hazard type	IEC / EN standard	Concept
General requirements		All	All	60079-0	
Intrinsic safety	ia, ib, ic	0, 1, 2 20, 21, 22 21, 22 22	Gas Gas Dust	60079-11	Limiting ignition energy
Increased safety	eb, ec	1, 2 2	Gas Gas	60079-7	Prevention of sparks
Non-sparking	nA	2	Gas	EN 60079-15	No arcs, sparks or hot surfaces
Flameproof enclosures	da, db, dc	0, 1, 2 1, 2 2	Gas Gas Gas	60079-1	Propagation prevention
Powder filling	q	1, 2	Gas	60079-5	
Restricted breathing	nR	2	Gas	60079-15	
Sealed device	nC	2	Gas	60079-15	
Pressurization	pxb, pyb, pzc	1, 2 21, 22 2	Gas Dust Gas	60079-2	
Pressurized room	pb, pc	1, 2 2	Gas Gas	60079-13	
Artificially ventilated	vc	2	Gas		
Encapsulation	ma, mb, mc	0, 1, 2 20, 21, 22 1, 2 21, 22 2	Gas Dust Gas Dust Gas	60079-18	Prevent ingress of explosive atmosphere
Liquid immersion	ob	1, 2	Gas	60079-6	
Protection by enclosure	ta, tb, tc	20, 21, 22 21, 22 22	Dust Dust Dust	60079-31	
Optical radiation	op pr, op is, op sh	1, 2 21, 22 0, 1, 2 20, 21, 22 0, 1, 2 20, 21, 22	Gas Dust Gas Dust Gas Dust	60079-28	Prevention of optical energy release Limiting optical energy Interlocked with optical breakage

Environmental protection code / class

IP protection codes (IEC 60529)		NEMA types (NEMA 250)	
First numeral: Protection against solids	Second numeral: Protection against water	Type	Application
0	No protection	1	Indoor
1	Greater than 50 mm	2	Indoor
2	Greater than 12.5 mm	3, 3R, 3S	Outdoor
3	Greater than 2.5 mm	4, 4X	Indoor / outdoor
4	Greater than 1 mm	5	Indoor
5	Dust protected	6	Indoor / outdoor
6	Dust tight	7	Indoor
		8	Indoor / outdoor
		9	Indoor
		12, 12K	Indoor
		13	Indoor

Type	Application	Protection against	Equivalent guideline IP rating
1	Indoor	General purpose	10
2	Indoor	Dripping water, falling dust	11
3, 3R, 3S	Outdoor	Rain, snow, windblown dust	54
4, 4X	Indoor / outdoor	Hose-directed water, corrosion (X)	55, 56
5	Indoor	Angled dripping water, settling dust	52
6	Indoor / outdoor	Temporary submersion	67
6P	Indoor / outdoor	Prolonged submersion	67
7	Indoor	Hazardous Location Class I	
8	Indoor / outdoor	Hazardous Location Class I	
9	Indoor	Hazardous Location Class II	
12, 12K	Indoor	Dripping non-corrosive liquid, dust	52
13	Indoor	Water, oil, dust, seepage	54

USA / Canada Marking

Example Zone scheme marking

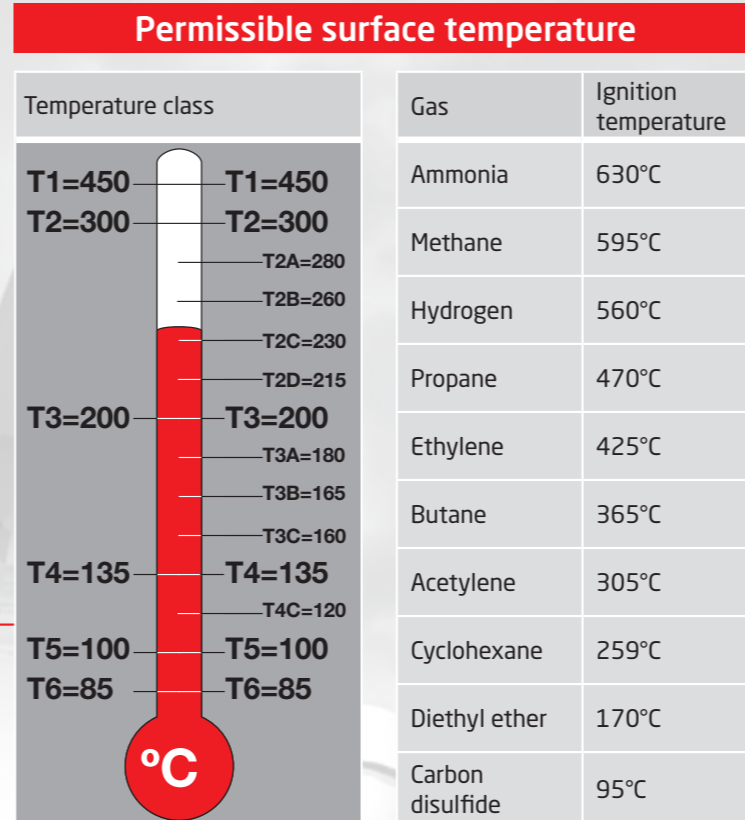
Zone scheme gas* **Zone 0 AEx ia IIC T4 Ga**

Zone scheme dust* **Zone 0 AEx ta IIIC T90°C Da**

Class zone, (NEC505, NEC506)

Explosive atmosphere	Zone classification	Presence of explosive atmosphere	Equipment protection level
Gas Fg Liquid	Zone 0	Continuous, long periods, frequent	Ga
	Zone 1	Occasional	Gb
	Zone 2	Normally not, only for a short period	Gc
Dust	Zone 20	Continuous, long periods, frequent	Da
	Zone 21	Occasional	Db
	Zone 22	Normally not, only for a short period	Dc

Typical gas / dust	Identification NEC 505	Identification NEC 500
Methane	I	Mining
Propane	II A	Class 1 / GP D
Ethylene	II B	Class 1 / GP C
Hydrogen	II B + H2	Class 1 / GP B
Acetylene	II C	Class 1 / GP A
Fibers and flyings	III A	Class III
Non-conductive dusts	III B	Class II / GP G
Carbonaceous dusts	III B	Class II / GP F
Metal dusts	III C	Class II / GP E



Dust temperature: Max. surface temperature is shown in full in the markings for dust, e.g. T90°C.

*RED text in markings above applies to US only.

Note: US installations may use the zone or division marking scheme. New installations in Canada must use the zone marking scheme, while existing installations may use either scheme.

Ex identification acc. to standard (example)

[AEx ia] IIC	ANSI/ISA 60079-0	Associated apparatus. Transmits to or receives signal from Ex area.	[] Associated equipment
AEx ia IIC T6	ANSI/ISA 60079-0	Installation in Ex area.	Equipment

Protection types - Zone Scheme

Protection method	Type	Zones	Hazard type	Standard ISA / UL / CSA	Concept
General requirements		All	All	60079-0	
Intrinsic safety	ia	0, 1, 2 20, 21, 22	Gas Dust	60079-11	Limiting ignition energy
	ib	1, 2 21, 22	Gas Dust		
	ic	2 22	Gas Dust		
Increased safety	eb, ec	1, 2 2	Gas Gas	60079-7	Prevention of sparks
Flameproof enclosures	da, db, dc	0, 1, 2 1, 2 2	Gas Gas Gas	60079-1	Propagation prevention
Powder filling	q	1, 2	Gas	60079-5	
Restricted breathing	nR	2	Gas	60079-15	
Sealed device	nC	2	Gas	60079-15	
Pressurization	pxb, pyb, pzc	1, 2 21, 22 2	Gas Dust Gas	60079-2	
Pressurized room	pb, pc	1, 2 2	Gas Gas	60079-13	
Encapsulation	ma, mb, mc	0, 1, 2 20, 21, 22 1, 2 21, 22 2	Gas Dust Gas Dust Gas	60079-18	Prevents ingress of explosive atmosphere
Liquid immersion	ob	1, 2	Gas	60079-6	
Protection by enclosure	ta, tb, tc	20, 21, 22 21, 22 22	Dust Dust Dust	60079-31	
Optical radiation	op pr, op is, op sh	1, 2 21, 22 0, 1, 2 20, 21, 22 0, 1, 2 20, 21, 22	Gas Dust Gas Dust Gas Dust	60079-28	Prevention of optical energy release Limiting optical energy Interlocked with optical breakage

Example Division scheme marking

Class I Division 1 Group A,B,C,D T6

Class division (NEC500)

Explosive Atmosphere	Class	Division	Group	Eqv. Zone	Presence of explosive atmosphere
Gas Vapor Liquid	Class I	1	A, B, C, D	0 or 1	Continuous, long periods, frequent
		2	A, B, C, D	2	Occasional
Dust	Class II	1	E, F, G	20 or 21	Continuous, long periods, frequent
		2	F, G	22	Occasional
Fibers	Class III	1		20 or 21	Constant
		2		22	Occasional

Protection Types - Division system

General requirements	Gas	Dust	FM / UL (NEC 500)	Canada (CEC) CSA
Intrinsic safety	Class I, Div 1	Class II, Div 1	UL913 / FM3610	C22.2 No.157
		Class II, Div 2		
		Class III, Div 1		
Explosion proof / Dust ignition proof	XP	Class I, Div 1	UL1203	C22.2 No.30
		Class I, Div 2		
Non-incendive	NI	Class I, Div 2	FM3615	C22.2 No.60079-2
		Class III, Div 2		
Pressurized / Purged	Type X	Class I, Div 1	FM3620	C22.2 No. 60079-2
	Type Y	Class I, Div 1		
	Type Z	Class I, Div 2		

