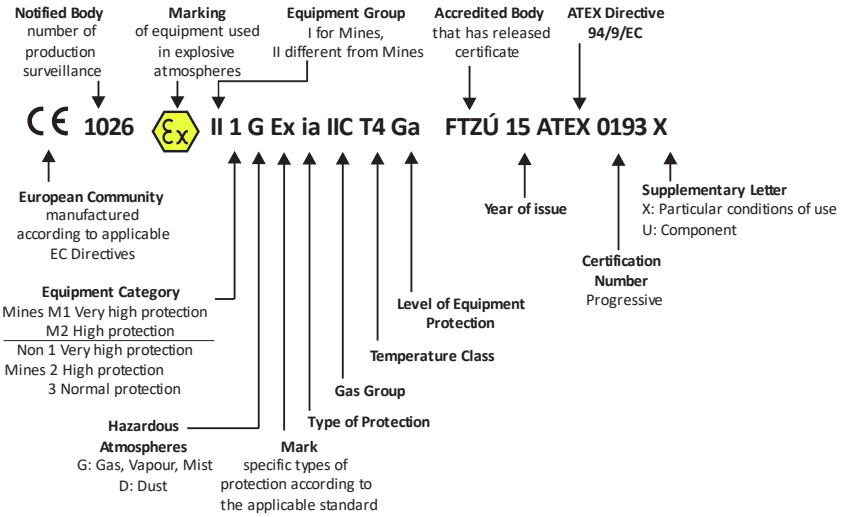
Marking according to ATEX 94/9/EC



ATEX and IECEx: Groups, Categories, Zones and EPLs							
Protection Level	Definition	Explosive atmosphere	94/9/EC (ATEX)		94/9/EC (ATEX)	IECEx	
			Group	Equip-ment Category	Area Classifi-cation	Group	EPL
Very High two independent modes of protection or one mode of protection allowing two inde-pendent faults	Explosive atmosphere is present frequently, for long periods or conti-nuously	Coal Mine	I	M1	-	I	Ma
		Gas	II	1G	Zone 0	II	Ga
		Dust	II	1D	Zone 20	III	Da
High one mode of protection allowing only one fault	Explosive atmosphere is occasionally present during normal operati-on	Coal Mine	I	M2	-	I	Mb
		Gas	II	2G	Zone 1	II	Gb
		Dust	II	2D	Zone 21	III	Db
Normal normal safe operation	Explosive atmosphere is not present during normal operation or only for short periods	Gas	II	3G	Zone 2	II	Gc
		Dust	II	3D	Zone 22	III	Dc

Field Equipment:

Simple Apparatus:

Less than 1.5 V; 0.1A; 20 ц; 25 mW (Tc, RTD, pot, switch...).

A simple apparatus is considered not to require a certificate by a notified body. Certification as per the ATEX Directive is not required because of low levels of energy added to the intrinsically safe circuit of this apparatus. A simple apparatus has to be clearly identified when installed. A simple apparatus has to conform to all relevant standard requirements.

Intrinsically Safe Apparatus:

Certification is required.

Safety parameters in compliance with **Assosiated Apparatus:**

Ui/Vmax (max. input voltage); **II/Imax** (max. input current); **Pl** (max. input power); **Cl** (internal in-ductance)

Control Room Equipment:

Associated Apparatus:

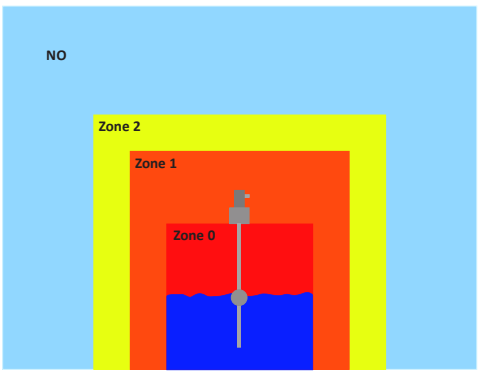
Certification is required.

Safety parameters in compliance with **Intrinsically Safe Apparatus:**

Uo/Voc (open circuit voltage), Io/Isc (short circuit current); Po (max. output power), Co/Ca (allowed capacitance); Lo/La (allowed inductance)

Non Intrinsically Safe Apparatus:

No approval is required.



Zones		
Atmosphere	Zone	Area Classification
Gas	Zone 0	Continuous Hazard
	Zone 1	Intermittent Hazard
	Zone 2	Infrequent Hazard
Dust	Zone 20	Continuous Hazard
	Zone 21	Intermittent Hazard
	Zone 22	Infrequent Hazard
Fiber	Zone 20	Continuous Hazard
	Zone 21	Intermittent Hazard
	Zone 22	infrequent Hazard

Temperature class	Max. surface temperature
T1	450 °C
T2	300 °C
T3	200 °C
T4	135 °C
T5	100 °C
T6	85 °C

Groups		
Atmosphere	Group	Representative Element
Gas	Group I	Methane
	Group IIA	Propane
	Group IIB	Ethylene
	Group IIC	Hydrogen
	Group IIC	Acetylene
Dust	Group IIIB	Non-conductive dust
	Group IIIB	Carbonaceous dust
	Group IIIC	Metal dust
Fiber	Group IIIA	Fibers or flyings

Electrical Apparatus for Gas and Dust Explosive Atmospheres				
Type of Protection	Concept	Code	EPL	IEC / CENELEC standard
Gas				
General Requirements		-	-	60079-0
Intrinsic Safety	Energy limitation	Ex ia Ex ib Ex ic	Ga or Ma Gb or Mb Gc	60079-11
Intrinsically Safe Systems	Energy limitation	Ex ia Ex ib Ex ic	Ga Gb Gc	60079-25
Increased Safety	Non sparking	Ex e	Gb or Mb	60079-7
Type n (non sparking/non incendive)	Non sparking	Ex nA Ex nC	Gc	60079-15
Flameproof / Expl. proof	Explosion containment	Ex d	Gb or Mb	60079-1
Powder Filling	Explosion containment	Ex q	Gb or Mb	60079-5
Type n (enclosed-break)	Explosion containment	Ex nC	Gc	60079-15
Encapsulation	Separation of explosive atmosphere from sparking elements	Ex ma Ex mb Ex mc	Ga or Ma Gb or Mb Gc	60079-18
Type n (sealed/hermetically sealed)	Separation of explosive atmosphere from sparking elements	Ex nC	Gc	60079-15
Pressurization	Separation of explosive atmosphere from sparking elements	Ex pv Ex px ex py Ex pz	Ga or Ma Gb or Mb Gb Gc	60079-2
Oil Immersion	Separation of explosive atmosphere from sparking elements	Ex o	Gb	60079-6
Type n (restricted breathing)	Separation of explosive atmosphere from sparking elements	Ex nR	Gc	60079-15
Special Requirements		-	Ga	60079-26
Dust				
Intrinsic Safety	Energy limitation	Ex ia Ex ib Ex ic	Da Db Dc	60079-11
Dust flamenproof	Separation of explosive atmosphere from sparking elements	Ex ta Ex tb	Da Db	60079-31
Dust tight	Separation of explosive atmosphere from sparking elements	Ex tc	Dc	60079-31
Encapsulation	Separation of explosive atmosphere from sparking elements	Ex ma Ex mb Ex mc	Da Db Dc	60079-18
Pressurization	Separation of explosive atmosphere from sparking elements	Ex pD	Db or Dc	61241-4

Protection Degree			
First number: protection from solids		Second number: protection from water	
0	No protection	0	No protection
1	Greater than 50 mm	1	Vertical dripping
2	Greater than 12.5 mm	2	Angled dripping (15°)
3	Greater than 2.5 mm	3	Spraying
4	Greater than 1 mm	4	Splashing
5	Dust protected	5	Jetting
6	Dust tight	6	Powerful jetting
		7	Temporary immersion
		8	Continuous immersion