

ATEX Directive 94/9/CE for Potentially Explosive Atmospheres

The ATEX 94/9/CE European regulations establish general principles for the safety of potentially explosive sites (application: July 1, 2003):

- Determining and classifying the risk
- Conformity assessment procedure in the community legislation

References

ATEX 94/9/CE directive

CENELEC: standards for electric materials: **EN50014, EN50018, EN50019 and EN50020**

Notified bodies for ATEX in France: **L.C.I.E. and INERIS**

The following must be defined for each installation according to the type of risk:

• Gaz group

- ◇ Group I: mines full of firedamp
- ◇ Group II: surface industries
 - **IIA**: butane
 - **IIB**: ethylene
 - **IIC**: hydrogen, acetylene

• Risk Category and Explosive Zone




Category	Presence of gas / oxygen mix	Gas Atmosphere	Gas and Dust Atmosphere
1	Continuous or long duration	Zone 0	Zone 0 and Zone 20
2	Frequent under normal conditions	Zone 1	Zone 1 and Zone 21
3	Infrequent or short duration	Zone 2	Zone 2 and Zone 22

• Protection mode

- ◇ Intrinsic safety « i »
 - **ia**: protection assured during two faults
 - **ib**: protection assured during one fault
- ◇ Explosion-proof enclosure « d »
- ◇ Increased safety « e »

Each instrument's marking specifies its domain of use

Example:

 CE marking and  EEx	0080 Identification of notified body for monitoring ia Circuit category	 Use of material in explosive atmospheres IIC Gas group	II Group of instruments for monitoring T6 Surface temperature class	2 Category of instruments for zone 1	G and D Gas Dust
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In practice:

- When ordering materials, the following needs to be specified: protection mode, **risk category, gas group as well as gas or gas and dust atmosphere.**
- The association of these materials must be made according to the protection mode rules for each material.
- Maintenance conditions for each material is specified in the instruction notices for each material.

OUR OFFER

To meet the requirements for risk zones in potentially explosive atmospheres, PYRO-CONTROLE has developed an ensemble of materials equipped with or without transmitters.

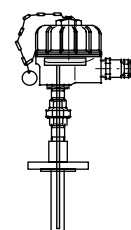
Conformity assessment is made by:

- The creation of a technical file defining each type of material
 - The assessment of CE conformity of the instruments by a notarized body approved by a CE type conformity certificate
 - The setting-up of a quality assurance system with monitoring and regular audits by a notarized body
- The below tables specify instruments, for each protection mode, that conform to the ATEX 94/9/CE directive for each zone.

1 - Increased safety « e »

- All installations in **GAS** atmosphere for **group II** non-mining industries below:

Zone and Presence of gas / oxygen mix	Category	Gas group
Zone 1 Frequent under normal conditions	2	Group II
Zone 2 Infrequent or short duration	3	



Sensors with
PEX heads

These installations are covered by sensors:

	Certificate	Marking
PEX type heads	L.C.I.E.* 03ATEX6037X	ATEX 0081 II 2 G CENELEC EEx e II T6 à T1

*LCIE: France's Central Laboratory for Electrical Industries

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2 - Intrinsic safety « i »

- All installations **GAS** atmosphere for **groupe II** non-mining industries below:

Zone and Presence of gas / oxygen mix	Category	Circuit	Gas group
Zone 0 Continuous or long duration	1	ia	Group IIC Acetylene Hydrogen or Group IIB Ethylene or Group IIA Propane Gas
Zone 1 Frequent under normal conditions	2	ia	
Zone 2 Infrequent or short duration	3	or ib	

These installations are covered by sensors:

	Certificate
PEi type	L.C.I.E. 03ATEX6038X
DIN type	L.C.I.E. 03ATEX6039X
STC/MCO	L.C.I.E. 03ATEX6040X

Marking	
ATEX	CE 0080 EX II 1 G
CENELEC	EEx ia IIC T*

*T4 to T6 according to model with terminal or transmitter

- All installations in **GAS and DUST** atmosphere for **groupe II** non-mining industries below:

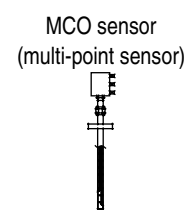
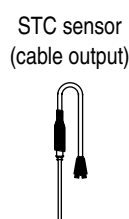
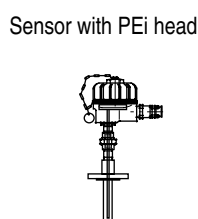
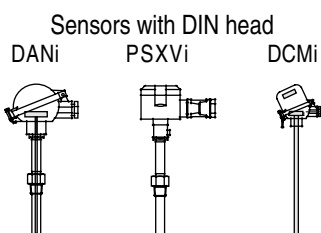
Zone and Presence of gas and dust / oxygen mix	Category	Circuit	Gas group
Zone 0 and zone 20 Continuous or long duration	1	ia	Group IIC Acetylene Hydrogen or Group IIB Ethylene or Group IIA Propane Gas
Zone 1 and zone 21 Frequent under normal conditions	2	ia	
Zone 2 and zone 22 Infrequent or short duration	3	or ib	

These installations are covered by sensors:

	Certificate
DIN type model IP65	L.C.I.E. 03ATEX6039X
STC/MCO models IP65	L.C.I.E. 03ATEX6040X

Marking	
ATEX	CE 0080 EX II 1 G and D IP65
CENELEC	EEx ia IIC T*

*T4 to T6 according to model with terminal or transmitter

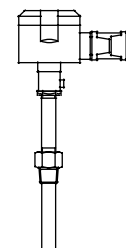


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3 - Explosion-proof enclosure « d »

- All installations in **GAS** atmosphere for **group II** non-mining industries below:

Zone and Presence of gas / oxygen mix	Category	Gas group
Zone 1 Frequent under normal conditions	2	Group IIC Acetylene Hydrogen or Group IIB Ethylene or Group IIA Propane Gas
Zone 2 Infrequent or short duration	3	



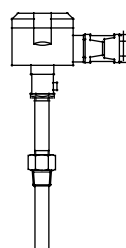
Sensor with PSX head

These installations are covered by sensors:

	Certificate	Marking
PSX PSXV Type	L.C.I.E. 03ATEX6036X	ATEX 0080 II 2 G CENELEC EEx d IIC T6

- All installations in **GAS and DUST** atmosphere for **group II** non-mining industries below:

Zone and Presence of gas and dust / oxygen mix	Category	Gas group
Zone 1 and Zone 21 Frequent under normal conditions	2	Group IIC Acetylene Hydrogen or Group IIB Ethylene or Group IIA Propane Gas
Zone 2 and Zone 22 Infrequent or short duration	3	



Sensor with PSX head

These installations are covered by sensors:

	Certificate	Marking
PSX PSXV Type model IP67	L.C.I.E. 03ATEX6036X	ATEX 0080 II 2 G et D IP67 CENELEC EEx d IIC T6