



Transforming energy into solutions

CERTIFIED PRODUCTS FOR HAZARDOUS LOCATIONS

EXPLOSION PROOF – EEx d EXPLOSION PROOF WITH INCREASED SAFETY TERMINAL BOX – EEx de	LOW VOLTAGE MEET ATEX DIRECTIVE 	Certified by CESI	ATEX CLASSIFICATION Category 2 and 3 (gas); Groups IIA and IIB; T4 IEC CLASSIFICATION Zone 1 and 2; Groups IIA and IIB; T4
	NEW LOW & MEDIUM VOLTAGE MEET ATEX DIRECTIVE 		ATEX CLASSIFICATION Category 2 and 3 (gas and dust); Groups IIA and IIB; T4 IEC CLASSIFICATION Zone 1, 2, 21 and 22; Groups IIA and IIB; T4
	NEW LOW VOLTAGE MEET ATEX DIRECTIVE 	Certified by IS&EP	ATEX CLASSIFICATION Category 2 and 3 (gas and dust); Groups IIA, IIB and IIC; T4 IEC CLASSIFICATION Zone 1, 2, 21 and 22; Groups IIA, IIB and IIC; T4
	NEW MEDIUM VOLTAGE MEET ATEX DIRECTIVE 		
INCREASED SAFETY – EEx e	LOW VOLTAGE MEET ATEX DIRECTIVE 	CERTIFIED BY PTB	ATEX CLASSIFICATION Category 2 and 3 (gas); Groups IIA, IIB and IIC; T4 IEC CLASSIFICATION Zone 1 and 2; Groups IIA, IIB and IIC; T4
	LOW & MEDIUM VOLTAGE MEET ATEX DIRECTIVE 	CERTIFIED BY PTB	
NON SPARKING – EEx nA	LOW VOLTAGE MEET ATEX DIRECTIVE 	Certified by PTB	ATEX CLASSIFICATION Category 2 and 3 (gas); Groups IIA, IIB and IIC; T4 IEC CLASSIFICATION Zone 1 and 2; Groups IIA, IIB and IIC; T4
	LOW & MEDIUM VOLTAGE MEET ATEX DIRECTIVE 		
	NEW LOW VOLTAGE MEET ATEX DIRECTIVE 	Manufacturer's Claim of Compliance	ATEX CLASSIFICATION Category 3 (gas); Groups IIA, IIB and IIC; T3 IEC CLASSIFICATION Zone 2; Groups IIA, IIB and IIC; T3
	NEW MEDIUM VOLTAGE MEET ATEX DIRECTIVE 		
PRESSURIZATION – EEx p	LOW, MEDIUM & HIGH VOLTAGE MEET ATEX DIRECTIVE 	Available on request.	ATEX CLASSIFICATION Category 2 and 3 (gas); Groups IIA, IIB and IIC IEC CLASSIFICATION Zone 1 and 2; Groups IIA, IIB and IIC

Below you have an example of an EEx e nameplate marking:

CE 0102 **Ex** **II 2 G** **EEx e** **II** **T1,T2,3,T4** **PTB 01** **ATEX** **3205**

CE marking | Identification code of notified body | Ex mark | Group of equipment | Category of equipment | Gas | Type of protection against explosion | Group of equipment | Class of temperature | Certifying Entity | Year | ATEX Directive | Certificate n°

ATEX DIRECTIVE 94/9/EC
ATMOSPHERE EXPLOSIVES
ATEX DIRECTIVE
 ATEX Directive 94/9/EC will become mandatory from June 30, 2003.

DEFINING
 Categorize equipment to classified areas. Essential safety requirements based on categorization. Certify equipment design, manufacturing and sales.

SCOPE
 Consider electrical and non electrical equipment, also dust-Ex hazardous areas, protective systems and components

ATEX CLASSIFICATION
 ATEX Directive 94/9/EC classifies the equipment to operate on explosive atmospheres into GROUPS and CATEGORIES, following the same classification bases used by CENELEC.

GROUP I (Mines)	GROUP II (Surface Industries)
Categories	Categories Zone
M1 - Equipment remains with an explosive atmosphere present	Equipment with a very high level of protection 10 (gas) 0 (gas) 10 (dust) 20 (dust)
M2 - Equipment to be de-energized in the event of an explosive atmosphere	Equipment with a high level of protection 20 (gas) 1 (gas) 20 (dust) 21 (dust)
	Equipment with a normal level of protection 30 (gas) 2 (gas) 30 (dust) 22 (dust)

TEMPERATURE CLASSIFICATION
 The minimum temperature causing an explosion of gas, vapour or explosive mixture is called ignition temperature. To avoid any risk of explosion, motor surface temperature must always stay below the ignition temperature of the explosive mixture.

The internal and external temperature of the electrical equipment must be strictly followed to avoid ignition of an explosive mixture. So the equipment is classified into classes of temperature, according below:

Maximum Surface Temperature (°C)	Temperature Classification
450	T1
300	T2
200	T3
155	T4
100	T5
85	T6

IEC CLASSIFICATION

The IEC Standard classifies the risk areas into ZONES and GROUPS. The ZONES are classified according to frequency and period of time that the explosive atmosphere is present. The division into GROUPS is based on the aggressiveness of the environment.

GROUPS	IEC CLASSIFICATION					
	ZONE 0 - Gas		ZONE 1 - Gas		ZONE 2 - Gas	
	Permanent Presence	ZONE 20 - Dust	Incidental Presence	ZONE 21 - Dust	Presence Only By Accident	ZONE 22 - Dust
	T1 (450°C)	T2 (300°C)	T3 (200°C)	T4 (135°C)	T5 (100°C)	T6 (85°C)
I MINES	methane					
E X P L O S I V E	acetic acid	acetylacetone				
	acetone	acetyl chloride				
	allyl chloride	acetyl acetate				
	ammonia	butane	bromobutane	butyraldehyde	butylalcohol	acetaldehyde
	aniline	butanol	butyl methyl ketone	butyl acetate	butylamine	benzaldehyde
	benzene	butyl acetate	butylamine	butylamine	butylamine	diethyl ether
	benzyl chloride	butylamine	butylamine	butylamine	butylamine	trimethylamine
	bromobutane	butyl methyl ketone	butylamine	butylamine	butylamine	
	chlorobenzene	butylamine	butylamine	butylamine	butylamine	
	chlorobutane	butylamine	butylamine	butylamine	butylamine	
	chloroethane	butylamine	butylamine	butylamine	butylamine	
	chloroethylene	butylamine	butylamine	butylamine	butylamine	
	chloromethane	butylamine	butylamine	butylamine	butylamine	
	chloropropane	butylamine	butylamine	butylamine	butylamine	
	cresol	butylamine	butylamine	butylamine	butylamine	
diacetone alcohol	butylamine	butylamine	butylamine	butylamine		
dichlorobenzene	butylamine	butylamine	butylamine	butylamine		
dichloropropane	butylamine	butylamine	butylamine	butylamine		
ethane	butylamine	butylamine	butylamine	butylamine		
ethyl acetate	butylamine	butylamine	butylamine	butylamine		
ethyl methyl ketone	butylamine	butylamine	butylamine	butylamine		
methane (industrial)	butylamine	butylamine	butylamine	butylamine		
methanol	butylamine	butylamine	butylamine	butylamine		
methyl acetate	butylamine	butylamine	butylamine	butylamine		
methyl formate	butylamine	butylamine	butylamine	butylamine		
naphthalene	butylamine	butylamine	butylamine	butylamine		
nitrobenzene	butylamine	butylamine	butylamine	butylamine		
phenol	butylamine	butylamine	butylamine	butylamine		
propane	butylamine	butylamine	butylamine	butylamine		
propylene	butylamine	butylamine	butylamine	butylamine		
propyl methyl ketone	butylamine	butylamine	butylamine	butylamine		
pyridine	butylamine	butylamine	butylamine	butylamine		
styrene	butylamine	butylamine	butylamine	butylamine		
toluene	butylamine	butylamine	butylamine	butylamine		
toluoline	butylamine	butylamine	butylamine	butylamine		
trimethylbenzene	butylamine	butylamine	butylamine	butylamine		
xylene	butylamine	butylamine	butylamine	butylamine		
M I N E S	acrylonitrile	butadiene	ethoxyethanol	hydrogen sulphide	dibutyl ether	carbon disulfide
	carbon monoxide	butene	hydrogen sulphide	hydrogen sulphide	diethyl ether	ethyl nitrate
	cyclopropane	dioxane	hydrogen sulphide	hydrogen sulphide	diethyl ether	
		epoxypropane	hydrogen sulphide	hydrogen sulphide	diethyl ether	
I I B	ethylene	ethylene oxide	hydrogen sulphide	hydrogen sulphide	diethyl ether	
	ethylene oxide	ethylene oxide	hydrogen sulphide	hydrogen sulphide	diethyl ether	
	oxydeformaldehyde	nitroethane	hydrogen sulphide	hydrogen sulphide	diethyl ether	
	nitropropane	nitropropane	hydrogen sulphide	hydrogen sulphide	diethyl ether	
I I C	paraformaldehyde	trioxane	hydrogen sulphide	hydrogen sulphide	diethyl ether	
	Blue water gas	hydrogen	hydrogen sulphide	hydrogen sulphide	diethyl ether	

WEG PRODUCTS

Designation	Objective	Standards	WEG Products
EEx d	Explosion Proof Motors Keep an internal explosion not allowing to propagate to the external environment.	EN 50018 IEC 60079-1	
EEx de	Explosion Proof Motors with Increased Safety Terminal Box Keep an internal explosion not allowing to propagate to the external environment, with special attention to the terminal box.		
EEx e	Increased Safety Ensure non occurrence of arcs or sparks under normal operation or on starting.	EN 50019 IEC 60079-7	
EEx nA	Non Sparking Ensure non occurrence of arcs or sparks under normal operation.	EN 50021 IEC 60079-15	
EEx p	Pressurization To prevent forming or entrance of an explosive atmosphere inside the motor	EN 50018 IEC 60079-2	

Note: For more information about the WEG range of products for hazardous locations, please see the first table on the top of this poster.

Other certifications: