Metal bellows coupling for use in potentially explosive atmospheres

The ATEX marking according to 2014/34/EU of the coupling provides information on its suitability and operating conditions.

CE	Ex	II	2G	Ex h	IIC	T6…T4	Gb	x
		II	2D	Ex h	IIIC	T135°C	Db	x

Conformity mark	Features: Prevention of Explosions	Equipment group	Device category	Ex: Applicable EN standards h: Type of ignition protection	Explosion group	Temperature class	Device protection level	Additional information

Equipment group	Meaning
I *	Approval for underground operation (mining)*
II	Approved for all other areas of use

Category	Permitted zone	Zone description
1G *	0 (incl. 1, 2) *	Area in which an explosive atmosphere is present constantly, for long periods, or frequently as a mixture of flammable substances in the form of gas, vapor, or mist with air.*
2G	1 (incl. 2)	Area where it is expected that an explosive atmosphere, consisting of a mixture of flammable substances in the form of gas, vapor or fumes with air, may occasionally occur during normal operation.
3G	2	Area where, under normal operating conditions, an explosive atmosphere is not expected to occur as a mixture of flammable substances in the form of gas, vapor or mist with air, but if it does occur, then only for a short time.
1D *	20 (inkl. 21, 22) *	Area with conditions like Zone 0 with a cloud of combustible dust in air *
2D	21 (inkl. 22)	Area with conditions similar to Zone 1 with a cloud of combustible dust in the air
3D	22	Area with conditions similar to Zone 2 with a cloud of combustible dust in the air

Type of ignition protection	Description
Ex h	Design safety: Ignition hazards are avoided through device design.

Example of the classification of gases, mists and vapors according to temperature class and explosion group:

Temperature class: Max. surface temperature	IIA (Hazard level of the gases: low)	IIB (incl. IIA) (Hazard level of the gases: medium)	IIC (incl. IIA + IIB) (Hazard level of the gases: high)
T1: 450° C	Acetone, ammonia, benzene, methane, …	Town gas	Hydrogen
T2: 300° C	i-Amyl acetate, n-butyl alcohol, acetic anhydride, …	Ethyl alcohol, ethylene, ethylene oxide	Acetylene
T3: 200° C	Gasoline, diesel, heating oil, …Acetaldehyde	Hydrogen sulfide	
T4: 135° C	Acetaldehyde	Diethyl ether	
T5: 100° C *			
T6: 85° C *			Carbon disulfide *

Device protection level (IEC 60079)	Meaning
Ga *	A very high level of security is guaranteed. *
Gb	A high level of security is guaranteed.
Gc	A normal level of safety is guaranteed.
Da *	A very high level of security is guaranteed. *
Db	A high level of security is guaranteed.
Dc	A normal level of safety is guaranteed.

Type of ignition protection	Description
X	Special operating conditions from manufacturer's description
U	A component is a part. Conformity must be declared after installation.

* Use of the JAKOB metal bellows couplings is not permitted