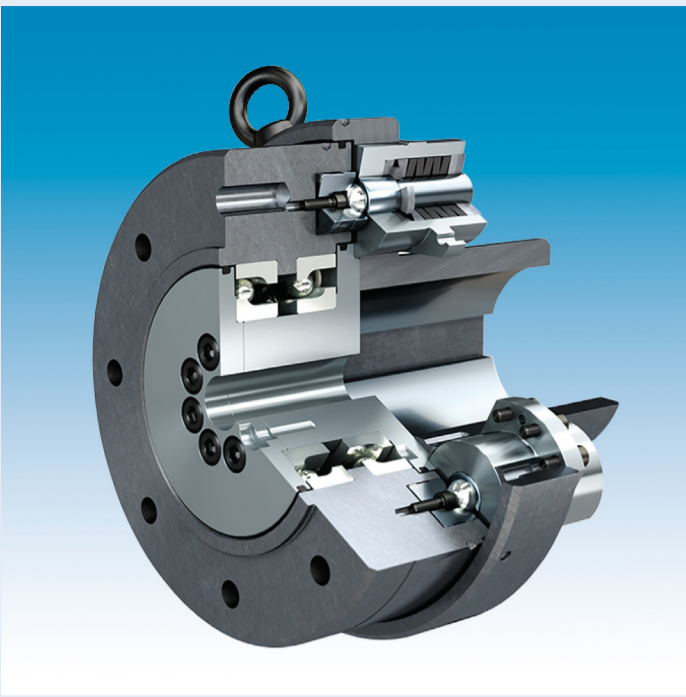
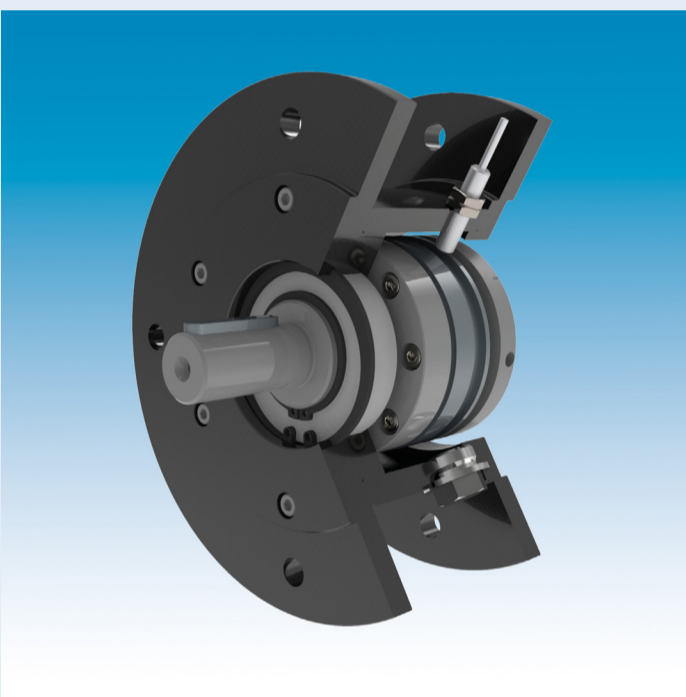




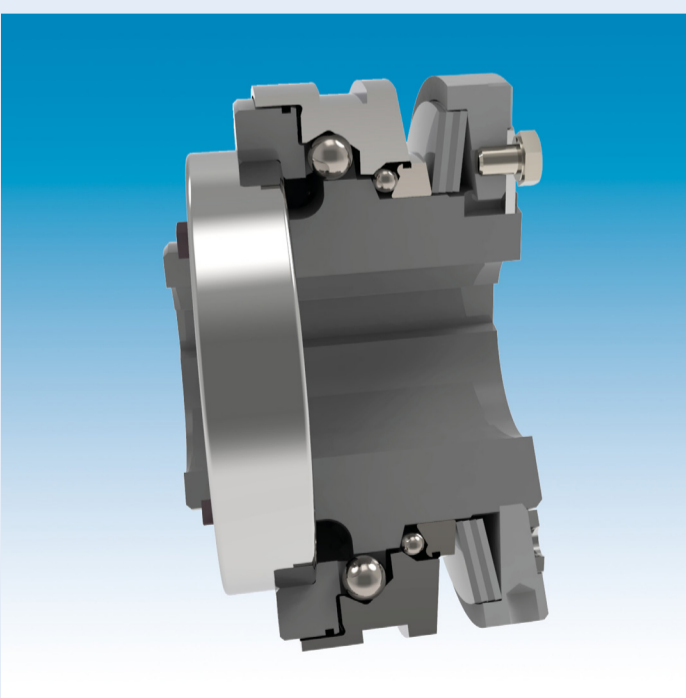
-marking for equipment in areas where there is a danger of explosion acc. Directives 2014/34/EU (ATEX) and DIN EN ISO 80079-36/37/38



Torque limiter
EAS®-element clutch / EAS®-dutytorque / EAS®-HT:
CE Ⓜ II 3G Ex h IIC T4 -15 °C≤Ta≤+80 °C Gc
CE Ⓜ II 3D Ex h IIC T150 °C -15 °C≤Ta≤+80 °C Dc



Torque limiter in enclosed housing
EAS®-HTL:
CE Ⓜ II 2G Ex h IIC T5 -15 °C≤Ta≤+80 °C Gb
CE Ⓜ II 2D Ex h IIC T110 °C -15 °C≤Ta≤+80 °C Db



Torque limiter
EAS®-Compact® overload clutch:
CE Ⓜ II 2G Ex h IIC T5 -15 °C≤Ta≤+80 °C Gb
CE Ⓜ II 2D Ex h IIC T110 °C -15 °C≤Ta≤+80 °C Db
The clutch marking can deviate dependent on the design of the shaft-hub connection.
Please observe the respective ATEX Installation and Operational Instructions.

Our experts are available to assist you with application-specific designs

Ignition protection type					
a) Standards for electrical equipment in areas where there is a danger of explosion					
Ignition protection type	Marking	Symbol	Protective principle	Zone	EN/IEC
General regulations	-		-	-	60079-0
Flameproof enclosure	Ex d		Prevents further transmission of explosion to the outside	1 / 2	60079-1
Increased safety	Ex eb / ec		Prevents sparks and high temperatures	1 / 2	60079-7
Intrinsic safety	Ex ia / ib / ic		Energy limitation of sparks and temperatures	0 / 1 / 2 / 20 / 21 / 22	60079-11
Pressurized encapsulation	Ex pv / px / py / pz		Separates explosive atmosphere from ignition source	1 / 2	60079-2
Encapsulation	Ex ma / mb / mc		Separates explosive atmosphere from ignition source	0 / 1 / 2 / 21 / 22	60079-18
Oil immersion	Ex o		Separates explosive atmosphere from ignition source	1 / 2	60079-6
Powder filling	Ex q		Prevents further transmission of explosion to the outside	1 / 2	60079-5
Ignition protection type "n"	Ex nC / nR		Different protective principles for Zone 2	2	60079-15
Protection by enclosure	Ex ta / tb / tc		Separates explosive atmosphere from ignition source	21 / 22	60079-31
Pressurized encapsulation	Ex p		Separates explosive atmosphere from ignition source	21 / 22	61241-4
b) Standards for non-electrical equipment in areas where there is a danger of explosion					
Ignition protection type	Marking	Symbol	Protective principle	Zone	EN/IEC
Basic method and requirements	-		-	0 / 1 / 2	80079-36
Protection by flow restricting enclosure	fr		Prevents further transmission of explosion to the outside	2 / 22	
Flameproof enclosure	d		Prevents further transmission of explosion to the outside	1 / 2 / 21 / 22	60079-1
Constructional safety	Ex h	c	Danger of ignition is prevented through equipment design	1 / 2 / 21 / 22	80079-37
Control of ignition sources	Ex h	b	Monitoring of possibly developing ignition sources	1 / 2 / 21 / 22	80079-37
Liquid immersion	Ex h	k	Separates explosive atmosphere from ignition source	1 / 2	80079-37

Examples for the classification and differentiation of gases, mists and vapors (must be observed for the different ignition protection types)					
Classification of gases and vapors	Explosion group			Temperature class and max. surface temperature	
	I	IIA	IIB		IIC
Methane		Acetone	Acrylonitrile Town gas	Hydrogen	T1 450 °C
		Ammonia			
		Ethane			
		Acetic acid Methane Propane			
		Cyclohexane	Ethylene Ethylene oxide	Acetylene	T2 300 °C
		Ethyl alcohol			
		n-Butane i-amyl acetate			
		Benzines	Ethyl glycol Hydrogen sulfide		T3 200 °C
		Diesel fuels Jet propulsion fuels Fuel oils n-Hexane			
		Acetaldehyde	Ethyl ether		T4 135 °C
				Carbon disulfide	T6 85 °C

Additional marking for dust explosion hazard areas acc. EN 60079-0		
IIIA	IIB	IIC
flammable lint	non-conductive dust	conductive dust

If no particular ambient temperature range Ta is specified, the standard range of -20 °C≤Ta≤+40 °C applies. For this, no special marking is necessary. Other ambient temperature ranges must be included in the marking, e.g. -15 °C≤Ta≤+80 °C.

CE Ⓜ Ex II 2G Ex h IIC T5 Gb X

CE-marking certifies conformity of product with the existing guidelines

Marking explosion-proof design

Official inspection authorities in Germany (if certified by an inspection authority)

ID	Inspection authority
0035	TÜV Rheinland
0102	PTB
0123	TÜV Süd
0158	DEKRA / EXAM
0588	FSA
0589	BAM
0637	IBExU
0556	DGUV
0044	TÜV Nord

Additional marking for dust explosion hazard areas

Combustible materials	Time-related behavior of combustible materials in explosive areas	Classification of areas where there is a high danger of explosion	Marking for equipment		
			Device group	Device category G = Gas D = Dust	
Gases, mists, vapors	are constantly present, present for prolonged periods or frequently present	Zone 0	II	1G	
	are occasionally present	Zone 1	II	1G	2G
	are probably not present; and, if present, only rarely or temporarily	Zone 2	II	1G	2G
Dusts	are constantly present, present for prolonged periods or frequently present	Zone 20	II	1D	
	are occasionally present	Zone 21	II	1D	2D
	are probably not present even in whirled dust, or are rarely or temporarily present	Zone 22	II	1D	2D
Methane, dust	-	Mining	I	M1	
	-	Mining	I	M1	M2

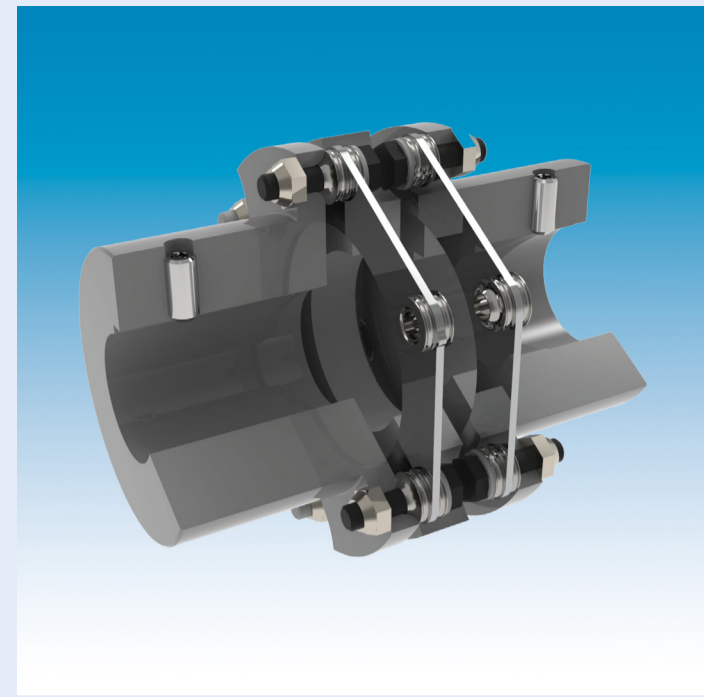
Additional classification acc. DIN EN ISO 80079-36

Device group	Equipment protection level (EPL)		
II	Ga	Gb	Gc
III	Da	Db	Dc
I	Ma	Mb	

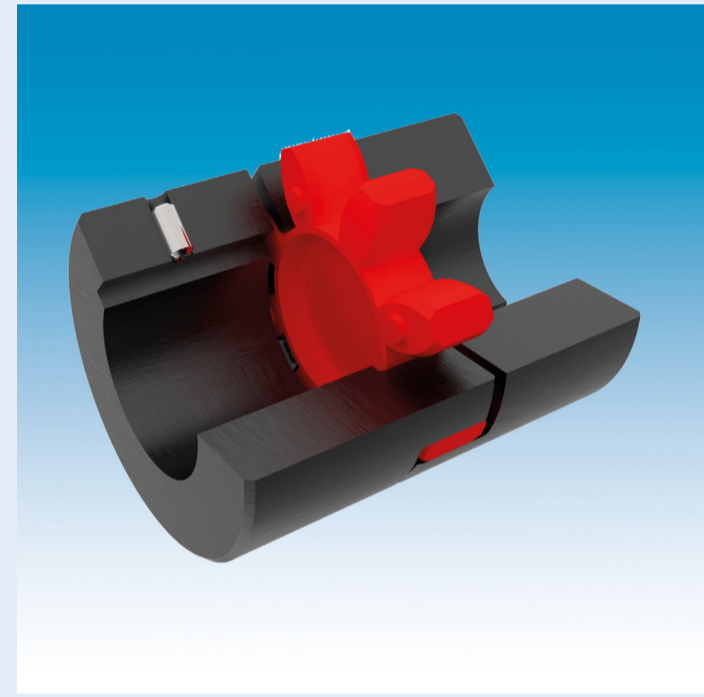
Actual maximum surface temperatures for the application field dust in °C

Additional conditions

Condition	Marking
Operational equipment can be used without restriction	-
Observe special operational conditions	X
EX component, partly certified, not suitable for use on its own; CE-conformity is certified after installation into the complete equipment.	U



Shaft coupling
ROBA®-DS Sizes 16 to 2200:
CE Ⓜ II 2G Ex h IIC T5 -30 °C≤Ta≤+80 °C Gb
CE Ⓜ II 2D Ex h IIC T110 °C -30 °C≤Ta≤+80 °C Db
CE Ⓜ I M2 Ex h I Mb
ROBA®-DS Sizes 3 to 15:
CE Ⓜ II 2G Ex h IIC T5 -20 °C≤Ta≤+80 °C Gb
CE Ⓜ II 2D Ex h IIC T110 °C -20 °C≤Ta≤+80 °C Db
The coupling marking can deviate dependent on the design of the shaft-hub connection.
Please observe the respective ATEX Installation and Operational Instructions.



Shaft coupling
ROBA®-ES:
CE Ⓜ II 2G Ex h IIC T4/T5/T6 -30 °C≤Ta≤+80/60/45 °C Gb
CE Ⓜ II 2D Ex h IIC T110 °C -30 °C≤Ta≤+80/60/45 °C Db
CE Ⓜ I M2 Ex h I Mb
The coupling marking can deviate dependent on the design of the shaft-hub connection.
Please observe the respective ATEX Installation and Operational Instructions.



Safety brake
ROBA-stop®-M brake:
CE Ⓜ II 3G Ex ec IIC T3 Gc X
CE Ⓜ II 3D Ex tc IIC T120 °C IP65/IP54 Dc X