

## Questionnaire Ex-protection

Company: .....

Mr / Mrs: .....

Project: .....

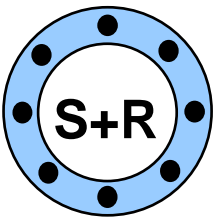
**Information required for determining the device features / categories for use in areas where there are potentially explosive atmospheres.**

↓ Please tick

1	Potentially explosive mixture from air with	<input type="checkbox"/>	gas	continue with 2
		<input type="checkbox"/>	dust	continue with 7
2	With gas: operating location of the drive arranged in zone	<input type="checkbox"/>	1	continue with 3
		<input type="checkbox"/>	2	continue with 6
3	With zone 1, the customer specifies the ignition protection class of the motor as	<input type="checkbox"/>	pressure-resistant enclosure (EEx d)	continue with 4
		<input type="checkbox"/>	increased safety (EEx e)	continue with 6
4	Version of the terminal box (KK) with motors in pressure-resistant enclosure	<input type="checkbox"/>	KK in pressure-resistant enclosure (EEx d)	continue with 5
		<input type="checkbox"/>	KK in increased safety (EEx d)	
5	Details for the explosion group (only with pressure-resistant enclosure)	<input type="checkbox"/>	IIA	continue with 6
		<input type="checkbox"/>	IIB	
		<input type="checkbox"/>	IIC	
6	Temperature class (with gas-air mixtures)	<input type="checkbox"/>	T1	finished
		<input type="checkbox"/>	T2	
		<input type="checkbox"/>	T3	
		<input type="checkbox"/>	T4	
		<input type="checkbox"/>	T5 (only with EEx d)	
		<input type="checkbox"/>	T6 (only with EEx d)	
7	With dust: operating location of the drive arranged in zone	<input type="checkbox"/>	21	continue with 8
		<input type="checkbox"/>	22 (non-conductive)	
		<input type="checkbox"/>	22 (conductive)	
8	Maximum permissible surface temperature (with dust-air mixtures)	<input type="checkbox"/>	T120°C	finished
		<input type="checkbox"/>	T140°C	

Date: ..... Signature: .....

**Please fax to S+R automation systems GmbH +49 (0) 6633-9600-93**



## Information on the individual positions

- 1) Assignment of the potentially explosive atmospheres in gas or dust
- 2) Zone assignment according to the operating location of the drive (the operator is responsible for the zone assignment complying with directive 99/92/EC. The TÜV, BG and technical expert offices offer assistance here.
  - Zone 1: potentially explosive gas mixtures are to be expected during normal operation.
  - Zone 2: potentially explosive gas mixtures are not to be expected during normal operation and when, then only temporarily.
- 3) Ignition protection types of the motor for use in zone 1:
  - pressure-resistant enclosure (EEx d):  
Potentially explosive mixtures can ingress into consumables, mixtures on the inside of the enclosure may be ignited → constructive measures prevent an ignition with the outer atmosphere.
  - increased safety (EEx e):  
Potentially explosive mixtures can ingress into consumables, no source of ignition in or on the consumables → no ignition of the gas mixture.
- 4) Version of the terminal box with pressure-resistant encapsulated motors in ignition protection
  - pressure-resistant enclosure (EEx d):
  - When selecting this terminal box version, it is imperative to note the approved cable throughways (Conduit-System, Cable Glands, ...). In addition, the thread type of the screw connection (ISO or NPT) must be specified.
  - increased safety (EEx e):  
When selecting this terminal box version, feeding the cables through is much easier, only an explosion protection approved screw connection must be used.
- 5) The explosion group depends on the material. (Details only necessary with pressure-resistant encapsulated motors) Observe appropriate tabulations, e.g. Nabert/Schön, Kennzahlen brennbarer Gase und Dämpfe, Deutscher Eichverlag GmbH, 38102 Braunschweig (Figures for flammable gases and vapours).
- 6) The temperature classes each represent the guaranteed maximum surface temperatures of the drive. (Info on the temperature classes of the hazardous materials, see:
  - T1: maximum permissible surface temperature: 450°C
  - T2: maximum permissible surface temperature: 300°C
  - T3: maximum permissible surface temperature: 200°C
  - T4: maximum permissible surface temperature: 135°C
  - T5: maximum permissible surface temperature: 100°C
  - T6: maximum permissible surface temperature: 85°C
- 7) Zone assignment according to the operating location of the drive (the operator is responsible for the zone assignment complying with directive 99/92/EC. The TÜV, BG and technical expert offices offer assistance here.
  - Zone 21: potentially explosive dust-air mixtures are to be expected during normal operation.
  - Zone 22: potentially explosive dust-air mixtures are not to be expected during normal operation and when, then only temporarily.  
(Exception: conductive dusts, see EN 61241-2-2).
- 8) The maximum surface temperature of a drive in dust-air mixtures. Details will be specified in the value °C.  
Info for this purpose, e.g. in the *BIA Report, Characteristic values of the combustion and explosion of dusts*, issued by the Hauptverband der gewerblichen Berufsgenossenschaften, 53757 St. Augustin