

New series of dust explosion protected control and indicating devices for use in Zone 21 and Zone 22

Powder and dust-forming products are created during the production process in many branches of industry. Regardless of being classified as commercial dust (for example, for producing plastics, dyes or pharmaceuticals) or as waste dust, fire and in some circumstances, explosion hazards, originate from vast numbers of dust-forming substances.

With the series ConSig 7040, R. STAHL has developed a product which is directly tailored to the requirements of plant operators. Our tailored products are designed to cater for application in areas of Zone 21 and Zone 22, such as grain mills, malt houses and powdered-milk production.

These environments are characteristically less distinctive from those commonly known hazardous environments such as gas. Never the less we can not continue in ignore the underlying importance of dust explosion protection.



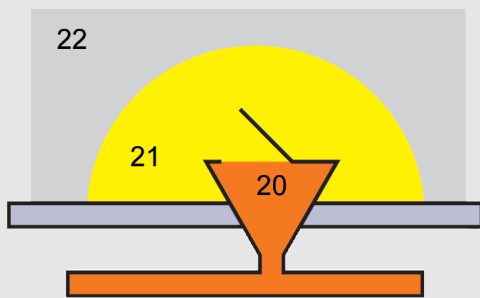
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According to the European Directive 1999/92/EC, the areas at risk of dust explosion must be divided into zones. This means that only dust explosion-protected electrical apparatus may be used.

The new series ConSig 7040 is dust-explosion protected according to EN 61241-1 (IEC 61241-1) with the type of protection „Protection by Enclosures“ and the Ex marking $\text{Ex II 2 D IP 66 T80 }^\circ\text{C, T100 }^\circ\text{C}$. The dust explosion protection is ensured by the material selection. The robustness and ingress protection of the enclosure has been certified by a notified body according to Directive 94/9/EC (ATEX). To meet these high testing requirements, R. STAHL uses the same enclosures, actuators and cable glands which have already been approved for the tried-and-proven series ConSig 8040 for use in Zone 1 („Gas Ex“).



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- Zone 20 Inside the hopper of a bag emptying station
- Zone 21 Immediate surroundings (radius of 1 m) around the manhole
- Zone 22 Area outside Zone 21 due to accumulations of dust

Example of the Classification into Dust Explosion Hazardous Areas according to IEC 61241-10

The differences between the new ConSig 7040 series and the ConSig 8040 series lie on the inside. Since the principle of the protection type „Protection by Enclosures“ is based on the ingress protection of the enclosure, non-explosion-protected industry components can be installed in the enclosure. Consequently, the tried-and-proven R. STAHL contact elements and indicating lamps were redesigned for such use.

This was made possible with the new G082 by utilising different design and manufacturing parameters (Pressure testing).



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Contact element
Series G082
(industrial version)



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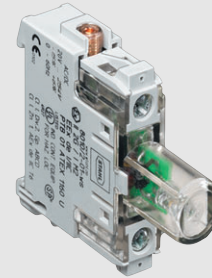
Contact element
Series 8082
(explosion-protected,
EEx de IIC)

Our new design for indicating lamps for dust protection completely omit the necessity for compound filling, in the new G010.



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Indicating Lamp
Series G010
(industrial version)



10643E00

Indicating Lamp
Series 8010
(explosion-protected,
EEx de IIC)

Thus, the customer reaps the advantage of the cost-effective components without having to forego the expected robust and reliable functionality. To prevent possible confusion with spare parts the Ex and Non-Ex Components are coloured differently (see above).

