

PRODUCT NOTE

Dust ignition proof low voltage motors

Reducing explosion risks in the food and beverage industry



The danger posed by combustible dust has been well known for many years, but explosions still occur every week. The majority of reported dust explosions happen in the F&B industry. Food processing creates dry dust which can be highly explosive. An ignition source such as a hot surface or spark may cause a massive explosion. Certified dust ignition proof motors can help to avoid disaster.

Where is combustible dust found?

In the food and beverage industry combustible dust is present in processes like:

- sugar
- grain and flour
- starch
- dairy powder
- cocoa powder
- brewing applications

The conversion process involves removing moisture from the base material. When the material is processed and conveyed, dust becomes airborne and highly combustible.

The ignition sources such as hot surfaces or sparks concerns can be present in non-certified electrical equipment such as like motors. Equipment that is certified dust ignition proof will not provide an ignition source and thus will not cause an explosion.

Certified safety

Dust ignition proof motors are certified according to the European ATEX directive and global IECEx system, and many other local certificates - such as CNEx, EAC and Inmetro - are available.

The certificates enable the motors to be operated with a variable speed drive (VSD) for speed control and maximized energy savings.



Product offering

ABB offers full range of dust ignition proof motors in both cast iron and aluminum frames.

| | Aluminum motors | Cast iron motors |
|----------------------|---|---|
| Output | 11 to 79 kW | 0.25 to 1000 kW |
| Frame sizes | IEC 160 to 250 | IEC 71 to 450 |
| Efficiency classes | IE2, IE3 | IE2, IE3 |
| Protection class | up to IP65 | up to IP66 |
| Marking and zone | Ex tb and Ex tc for zones 21 and 22 conductive / non-conductive | Ex tb and Ex tc for zones 21 and 22 conductive / non-conductive |
| Application examples | Ideal for applications like fans and pumps in sugar and grain processes | Designed for heavy duty applications like sugar milling, centrifuges and shredders |
| Key features | <ul style="list-style-type: none">- light in weight, enabling simple support structure- compact size saves space and therefore cost in machine building- smooth, easy to clean aluminum surface helps to improve safety | <ul style="list-style-type: none">- flexibility enables customization for any need or application |
| | <ul style="list-style-type: none">- certified for operation with variable speed drives- based on proven standard motors for fast delivery from stock- supported by ABB's global service network | |

