## muller beltex



SAFETY MONITORING A BUCKET ELEVATOR



Belt misalignment monitoring
Bearing temperature monitoring
Speed monitoring
Transmitters & converters
Explosion vent panels
& flameless vents

### **SCHEMATIC OVERVIEW** MONITORING OF AN INDOOR **ELEVATOR**

#### Preventive measures

Prevention is a better cure. Taking preventive measures is therefore the primary concern. These measures focus on preventing the possibility of creating an explosive hazardous situation by eliminating as many of the elements as possible. The risk involving a potentially hazardous mixture of powder and air, which could cause a dust explosion can be reduced by taking the following precautions:

- Mechanical conditioning of the whole installation
- Earthing the installations
- Good cleaning of the factory
- The removal of foreign objects in the installation
- Dustproof construction of equipment
- The installation of (ATEX) explosion safety systems

#### **Curative measures**

If all preventive measures have been taken and there is still an explosion risk, curative measures must be taken. These are aimed at providing protection from the consequences of an explosion. Examples are shown hereafter:

- Explosion-proof construction
- Explosion pressure relief
- Compartmentalisation
- Explosion suppression





the monitoring of one elevator

Junction box + transmitters & converters Cable type

SKADA / PLC

Belt misalignment monitoring | Preventive

A minimum of four Rub-Block belt misalignment sensors, to be used for fail-safe monitoring.

Bearing temperature monitoring | Preventive Each bearing (4pcs.) should be equipped with temperature monitoring sensors to guard against

Junction box large + transmitters & converters Use two large junction boxes for connecting belt misalignment and bearing temperature sensors.









Junction box large with head



Intrinsically safe



Junction box large



Example PLC

Intrinsically safe 24-wired cable



Junction box small with mounting bracket

Intrinsically safe 4 till



**Speed monitoring | Preventive** 

overheated bearings.

One speed monitoring sensor to verify belt slip

Junction box small Use one small junction box for connecting speed monitoring sensor.

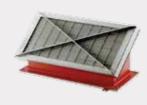






Flameless vents | Curative

Number of flameless vents is determined on the height and volume of the elevator. With outdoor elevators, applying explosion vent panels is possible.







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