

Bucket Elevator Monitoring System

The CS200S Elevator Control is an **explosion prevention system** that monitors the correct operation of a comprehensive detection system to prevent the occurrence of ignition sources in bucket elevators.

The system monitors four critical parameters of the elevator in real time: rotation, belt movement, blockages and bearing temperature, ensuring early detection of any condition that could lead to an ignition source.

Key Advantages

- Explosion prevention system specifically designed for bucket elevators.
- Simultaneous monitoring of four critical parameters: rotation, belt movement, blockages and bearing temperature.
- Ex II 3D marking, allowing installation directly at the base of the elevator, thereby reducing cabling.
- PLC-compatible for integration into plant control systems.
- Monitors the correct operation of all system detectors, not just process variables.

Standards & Certification

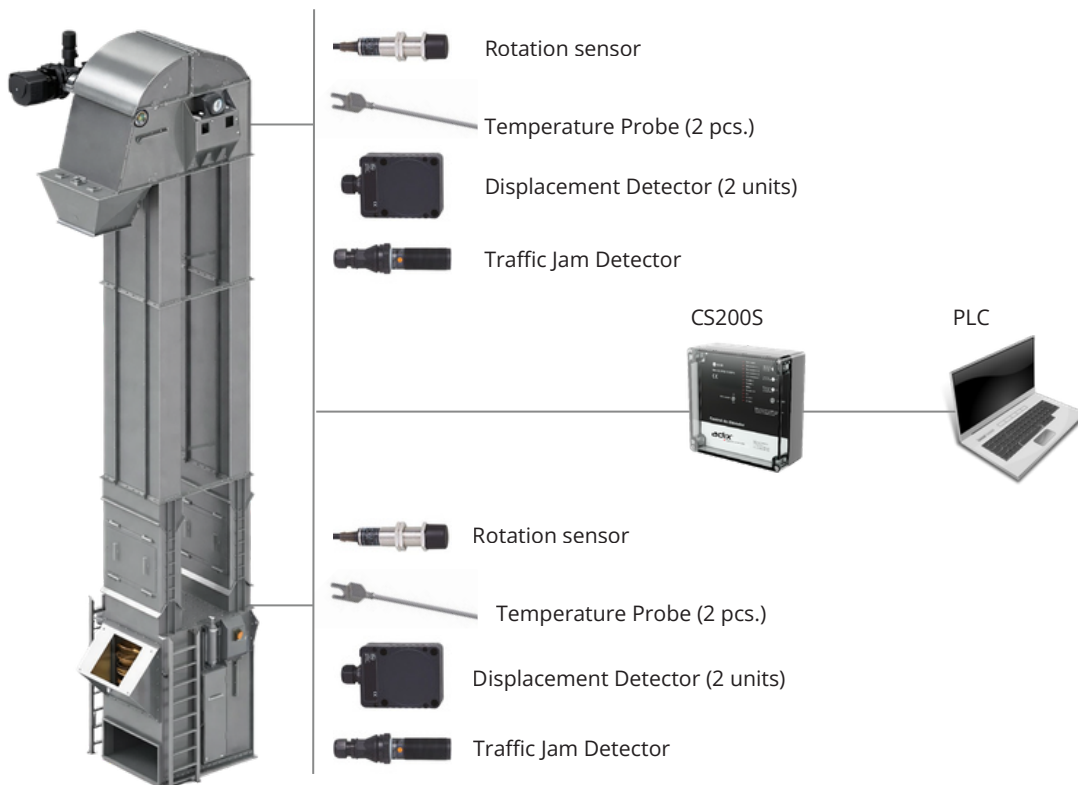
- ATEX marking: Ex II3D

Applications

The CS200S Elevator Control Unit is designed for use in bucket elevators in industrial processes where there is a risk of dust explosions; its use is mandatory as a preventive measure in accordance with ATEX regulations.

Typical applications:

- Bucket elevators in the food, chemical, feed and cereal industries, amongst others.



Components

> CS200S Control Unit.

The system's central unit, which receives and processes signals from all the detectors, continuously monitoring the correct operation of the entire system.

- Relay outputs: 2 (max. 230 VAC, 0.5 A)
- Operating temperature: 14°F to 104°F (-10°C to +40°C)
- Dimensions: 5.51 x 5.51 x 2.76 in (140 x 140 x 70 mm)
- Approx. weight: 4.41 lb (2.00 kg)
- Connections: max. 2.5 mm²
- ATEX marking: Ex II 3D



> Blockage detector.

A sensor that detects the build-up of material inside the lift, preventing overload situations that could block the belt and cause friction or excessive heat.

- Capacitive sensor
- PBT thread; PA, M30 x 1.5
- Terminal connections: 0.34–1.5 mm²; cable sheath: Ø 5–9 mm; cable gland: M20 x 1.5
- ATEX approval: Ex II 3D; connection accessory available for Zone 20
- Range 15 mm; adjustable; non-flush-mounted



> Belt Tension/Slip Detector.

A sensor designed to check that the lift's drive shaft is rotating correctly and that the belt is not slipping relative to the rated speed. If it is triggered, this indicates an abnormality in the movement that could lead to a potential ignition source.

- Inductive sensor
- M18 x 1 metal thread
- Wired connection
- ATEX certification, Group II, Category 3D
- Sensing range 8 mm; non-flush-mounted



> Temperature probe.

Temperature sensor fitted to the lift bearings to detect overheating that could act as a source of ignition.

- Screw-in sensor 10 x 18 x 48 mm
- Measuring range: 4°F to 239°F (-20...115°C)
- Sensing element: 1 x Pt 1000 (to DIN EN 60751, Class A)
- Protection class and rating: III | IP 67
- ATEX approval: Ex II 3D Ex tc IIIC T135°C Dc X | Ex II 3G Ex nA IIC T4 Gc X
- Cable connection: 5 m, silicone



> Band Displacement Detector.

A sensor that monitors the lateral position of the conveyor belt, detecting any misalignment that could cause the belt to rub against the housing and generate heat or sparks. Available in a capacitive version for plastic belts and an inductive version for metal belts, to suit the specific requirements of each installation.

- Rectangular plastic housing
- Connection terminals
- ATEX certification, Group II, Category 3D
- Reach 60 mm; non-flush-mounted



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