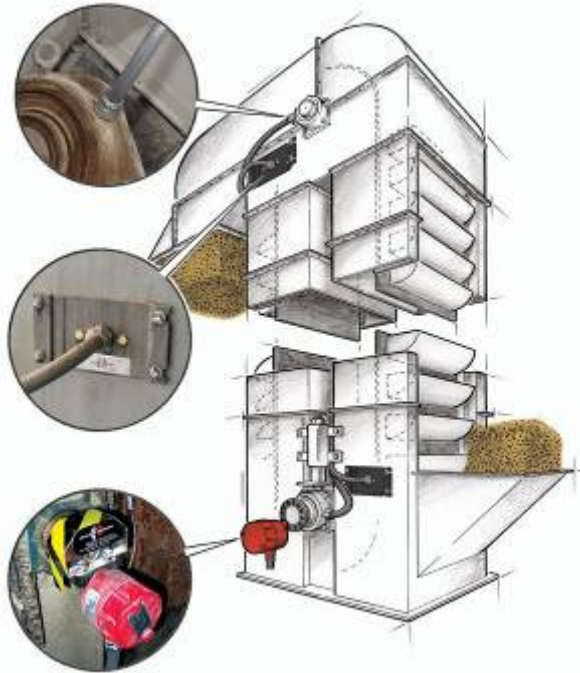


- Shaft Speed Slow-Down Detection
- Bearing Temperature Monitoring
 - Belt Alignment

TT420-Z Bearing Temperature Probe

TT420-S Probe, Rub-Block and Hinged Access Door

FB420 Shaft Speed Sensor and EZ100 Assembly



Electro-Sentry™ Hazard Monitoring System

Grain dust is extremely volatile and can easily explode with the proper ignition source in confined spaces. O.S.H.A. has mandated that grain elevators in Class 2, Division 1 environments must have the 3 monitoring sub-systems for elevator safety. (Note: this same rule applies to the flour & sugar processing industries). The Electro-Sentry system is used to minimize the risk of such explosions by early detection of a fault condition in a conveyor/elevator slowdown, bearing temperature, or belt mis-alignment – all of which can present an ignition source.



Grain Elevator - Terminal

- Bucket Elevators
- Drag Conveyors
- Belt Conveyors
- Screw Conveyors



FB420 Shaft Speed Sensor w/255 Disc & Guard

The FB420 is a shaft speed sensor that senses magnetic targets embedded in the 255 disc, and outputs a 4-20 mA signal proportional to shaft rotational speed to a PLC (shown below). The 4 & 20 mA calibration points are programmable from 0 RPM up to 9999 RPM. Bucket elevators and conveyors used in the grain industry generally require a programmed alarm at 10% shaft speed slow-down, and an alarm/shut-down in the event the shaft slows down below 20% of the desired full speed. The FB420 also has a single programmable relay output for either over or under speed for a failsafe alarm, as well as an LCD screen for easy calibration.

Benefits

- Accurate Real-Time Shaft Speed At PLC
- Simple installation & calibration
- UL Approved For Class 1 & 2 Locations
- NEMA 4X Enclosure



Command Center Controller With Touch Screen Interface & PLC

- Bucket Elevators
- Drag Conveyors
- Belt Conveyors
- Screw Conveyors



907-XP Hall-Effect Sensor With 255 Disc

The 907-XP Hall-Effect sensor senses magnetic targets embedded in the 255 disc, and sends a square wave pulse train to the TR400 Meter (shown below). The TR400 has a display for shaft RPM and 2 programmable relays, which are used to trip when the shaft on the conveyor slows-down below a pre-determined set-point. Bucket elevators used in the grain industry generally require a relay programmed to provide an alarm at 10% shaft slow-down. The second relay is programmed to alarm and shut-down the leg if the shaft slows-down below 20% of the desired full speed. The TR400 is also available with a 4-20mA output and/or 6 optional relays.

Benefits

- Fast/accurate shaft speed slow-down detection
- Visual display of RPM in control room
- Push-button relay & interlocking test feature
- Rugged and Reliable System



TR400 Meter With Programmable Relays

- Bucket Elevators
- Drag Conveyors
- Belt Conveyors
- Screw Conveyors



M100T Shaft Speed Switch With EZ100 and Stainless Steel Disc Guard

The M100T is a self-contained shaft speed switch with the sensor and switching electronics housed in a heavy duty, explosionproof and waterproof cast aluminum enclosure. The M100T has a single programmable relay (from 5 to 100 RPM) for underspeed protection and is supplied with a magnetic pulser disc (Model 255). Upon shaft rotation the 255 disc generates a frequency, which the M100T compares to the pre-calibrated set point. In the event of rotational slowdown or failure caused by a broken drive, belt slippage or overload, or product clogs, the relay can be used to provide an alarm or equipment shutdown.

Benefits

- Rugged And Reliable System
- UL Approved For Class 1 & 2 Locations
- 5 Year Warranty
- Simple To Install And Calibrate
- Suitable For Hazardous Locations
- Proactive Machinery Protection



M100T With 255 Pulser Disc

Bearing Temperature Monitoring

TT420-Z (DI) Temperature Probe



TT420-Z (DI) Temperature Probe mounted on a bearing

The TT420-Z Temperature probe assembly consists of a probe and integral transmitter that converts temperature across a range of -40°F to $+248^{\circ}\text{F}$ to a proportional 4-20 mA signal. The TT420-Z probes are 2-wire, loop-powered, and will immediately sense a rise in bearing temperature long before a hazardous condition occurs. The TT420-Z probe comes with an integral conduit adapter to mount into the NPT of the bearing assembly, which allows the easy interface with liquid tight connections and flexible conduit. The 4-20 mA output can be wired into any PLC or DCS system, without the use of a propriety controller or scanner.

Benefits

- No proprietary scanners and bus-node devices
- Easy trouble-shooting
- Rugged & Robust design
- Immune to electrical noise & moisture
- Integral transmitter – requires no field calibration
- 5 Year Warranty



TT420-Z (DI) Temperature Probe & Integral Conduit Adapter

Belt Misalignment Detection

TT420-S (DI) Temperature Probe, Rub Block & Door Assembly



TT420-S (DI) Temperature Probe with Integral Conduit Adapter & Hinged Door Assembly

The TT420-S probe is an ultra-sensitive and accurate 2-wire, loop-powered sensor with integral transmitter that converts temperature to a proportional 4-20 mA signal across a range of -40°F to $+248^{\circ}\text{F}$. TT420-S Temperature probes are supplied with a brass rub block & hinged access door assembly for each side of the monitored belt. In the event that the belt comes in contact with the rub block, friction will cause an immediate rise in temperature. The TT420-S detects this rise in temperature and transmits via the 4-20mA signal back to the PLC or DCS system. If the temperature rises above the desired set-point, a fault condition occurs and an alarm is generated. The 4-20 mA output can be wired into any PLC or DCS system, without the use of a proprietary controller or scanner. The rub block assembly also comes with a hinged access door for quick and easy maintenance access to the leg/conveyor interior as well as the brass rub block.

Benefits

- Rugged and reliable design
- No proprietary scanners or bus node devices
- Easy to troubleshoot
- Immune to electrical noise and moisture
- Integral transmitter – needs no field calibration
- 5-year warranty on all temperature sensors



Brass Rub Block and Hinged Access Door Assembly