



## What is the operating principle of a detector for XSAV type rotation control?

### Advantage and preferred uses

XSAVxx inductive sensors for rotation control have the special feature of combining data acquisition functions and processing by a pulse comparator in a single unit, thus creating an integrated rotation control device.

These devices provide a good solution for monitoring slip, belt break, coupling break, overloads, etc. in the following applications: conveyor belts, bucket elevators, lifting screws, grinders, crushers, pumps, centrifugal drying machines, mixing machines, etc.

### Principle

The output signal of this type of sensor is processed by a pulse comparator integrated in the device.

The frequency of the pulses  $F_c$  emitted by the moving element to be monitored is compared with the frequency  $F_r$  preset on the device.

The output switching circuit of the sensor is at closed state when  $F_c > F_r$  and open state when  $F_c < F_r$ .

XSA-V sensors are particularly suitable for underspeed detection: when the speed of the moving element to be monitored  $F_c$  falls below a preset threshold  $F_r$  following deceleration, this detection leads to opening of the device's output circuit.

### Other characteristics

Two ratings: 0.1 Hz-2.5 Hz and 2 Hz-50 Hz  
Cylindrical inductive sensor, diameter 30  
Range 10 mm

### Special features:

Detection and comparison of pulses are integrated in the device  
The frequency is preset in the device using a 15-turn potentiometer  
Caution: The adjustment of the threshold is not linear according to the number of turns  
For both ratings there is a 3-wire model with 12-48 VDC power supply and a 2-wire model with 24-240 VAC or 24-210 VDC power supply  
Rotation monitoring becomes effective 9 s after the sensor MST  
Connection via 2 m cable

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