



## Your project - Together we succeed

### OPCom FerroS: The monitoring solution for your gears in the mining sector

#### INITIAL SITUATION

Drive gears in mining are exposed to extreme loads. The almost permanent operation of the machine, the strong vibrations and infrequent oil changes lead to high wear in the gearbox and, in the worst case, to failure.

In addition to the associated repair costs, the operator also suffers considerable economic losses, as no raw materials can be extracted during the downtime.

Added to this is the uncertainty for the operator as to how quickly a replacement gearbox will be available.

ARGO-HYTOS has been confronted with this problem by several well-known mining companies in recent years.

In order to increase the reliability of the gearboxes and to detect damage at an early stage, ARGO-HYTOS has developed the wear sensor OPCom FerroS.

#### SOLUTION

The OPCom FerroS is a wear sensor based on the inductive measuring principle. Inside the sensor a permanent magnet is installed, which accumulates the ferromagnetic particles on the sensor surface. The sensor can distinguish between fine particles in the micrometer range (see Fig. 1) and coarse particles in the millimeter range (see Fig. 2).

The occupancy degree is output between 0% and 100% and can be issued via RS232, 4...20 mA or via CANopen. Thus, the sensor provides all common transmission types.

If the occupancy rate reaches 100%, the magnetic field is compensated and the sensor performs an automatic cleaning process. This automatic cleaning process is unique on the market.

To assess the condition of the gear unit, the sensor evaluates the time intervals between ejections (see Fig. 3). If the time between ejections decreases, this is an indication of incipient wear in the gear unit.



Fig. 1: Fine particles



Fig. 2: Coarse particles

### CUSTOMER BENEFIT

- Air bubbles and water drops do not affect the measurement accuracy
- Resistant to vibrations
- Easy installation via G1" screw-in thread, thus also suitable for retrofitting
- Real-time monitoring of the gearbox and early warning of a failure
- Avoidance of sudden production downtimes (cost saving)

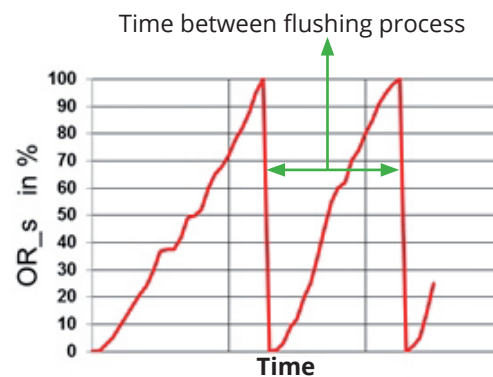
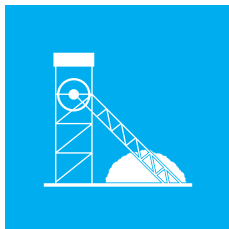


Fig. 3: Measuring signal

### APPLICATIONS



### Curious?

Do you have a similar challenge for us?  
Contact our expert.



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