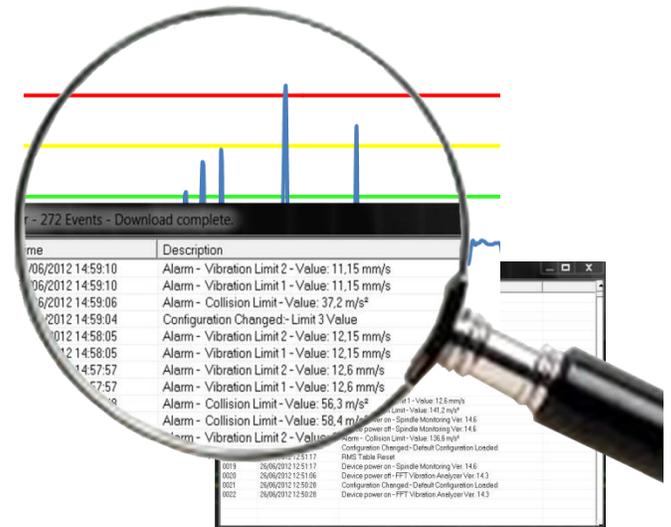# SEQUOIA

## SeTAC - Black Box

### The AIRBAG for machine tool collision prevention

Not a simple sensor but a real monitoring system which integrates the the sensing element, a powerful CPU and a large memory with the capacity to store up to 12.000 events.

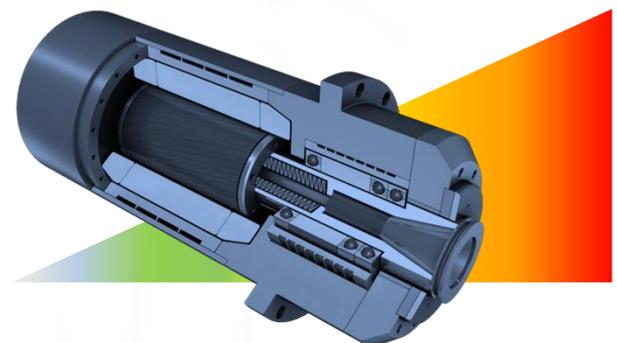The Black Box version includes the following functionalities:

- **AIRBAG**
  An alarm with a reaction time lower than 1 ms delivered directly to the machine PLC in case of collisions

- **BLACK BOX**
  Full recording of all collision events in its internal memory

- **PREDICTIVE MAINTENANCE**
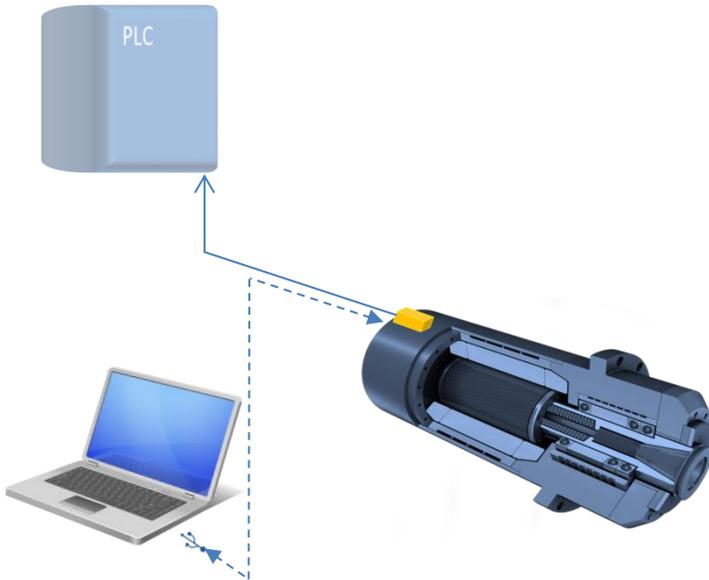  Effective Spindle operating hours recording taking into account the actual operating loads

$$Spindle\ Life \propto \left(\frac{C}{P}\right)^{k}$$

Where P is the Dynamic Load:

SeTAC ensures the optimization of the maintenance plan by direct measuring of the actual load on the spindle

## Sensor Machine Connection



The SeTAC Black Box can be connected directly to your Machine PLC without the need of any interface.

In this configuration a fast alarm is delivered, whenever a collision event occurs.

Sequoia supplies a USB interface to connect the sensor to a PC in order to set the alarm thresholds and to download the event logbook.

## Technical Specifications

| | |
|---|---|
| Full scale | ±18g |
| Bandwidth | 0÷2500 Hz |
| Resolution | 0,00075g |
| Dimensions | 30x55,5x15 mm |
| Weight | 55g |
| Supply Voltage | 18-26 $V_{DC}$ |
| Protection Grade | IP67 |
| Shock Resistance | 10.000 g |
| Temperature Range | 0÷70°C |



## COLLISION DETECTION

The machine damages due to the collision events increase over time. Fast detection and reaction are essential to protect your machine against any possible damage.

| T= 0 | T= 1 ms | | T= 200 ms |
|---|---|---|---|
| Collision Event | SeTAC Reaction | | Standard CNC Reaction |