



# Early detection of mechanical damage in press working lines

## SIPLUS CMS Condition Monitoring Systems in the automotive industry

Minimized downtimes and optimum utilization of personnel and equipment are important keys to sustained success in industrial applications. For this reason it is necessary to detect potential fault sources at an early point in time, and integrate pending maintenance at the right time in the production cycle.

### Vibration monitoring

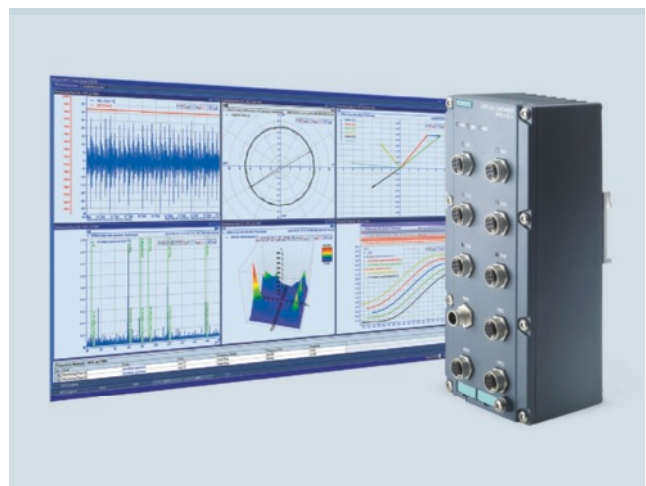
Vibration monitoring is the most reliable method for early detection of mechanical damage. The high-performance SIPLUS CMS4000 Condition Monitoring System can record up to 180 vibration signals in parallel and synchronously. Analysis and diagnostics of this data are carried out using a wide range of standard function blocks, where process signals from all automation components can be taken into consideration at the same time.

### Effective condition monitoring under complicated conditions

Machining in the press working line takes place in several stages on consecutive presses. A particular challenge for condition monitoring results from the successive pressing impacts and the widely varying motor speed during the pressing cycle. Using appropriate analytical procedures and trigger conditions, it is possible to generate informative parameters in the SIPLUS CMS X-Tools analysis software. These allow determination of the mechanical condition.

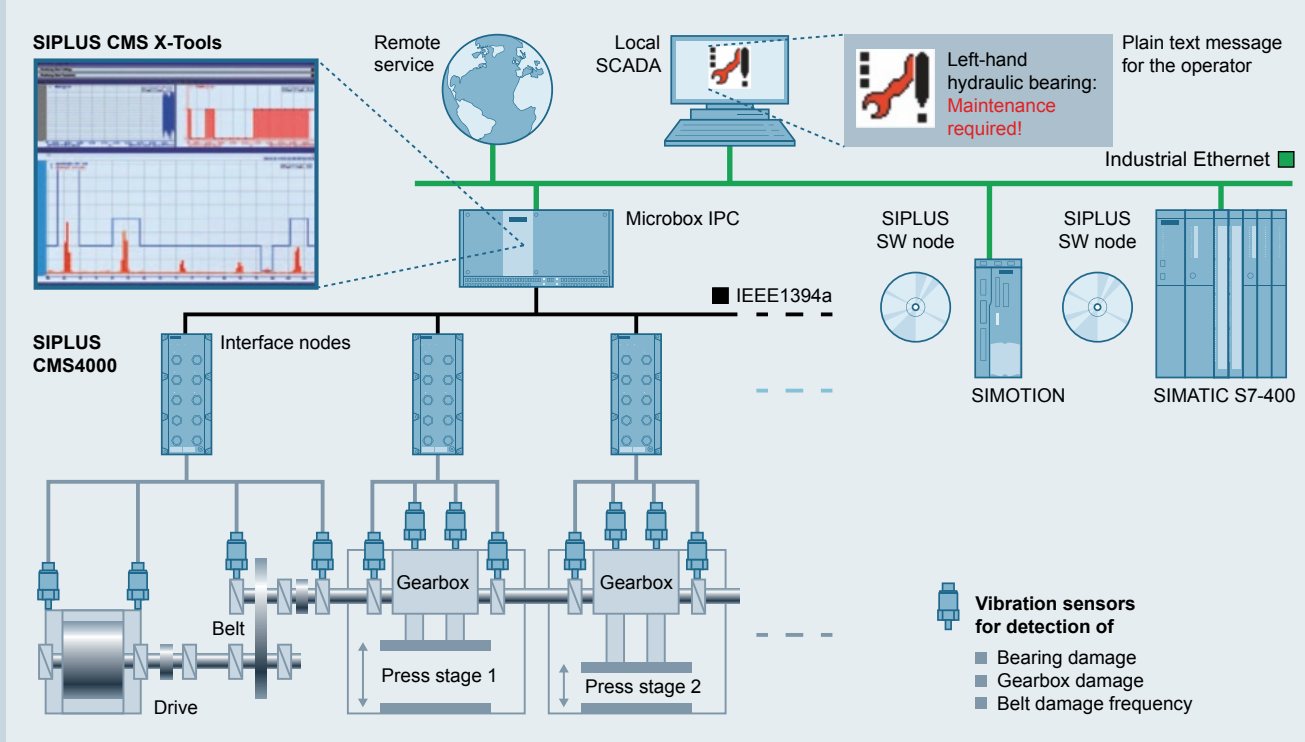
### Highlights at a glance

- Significantly increased plant availability thanks to early detection of mechanical damage
- Optimum utilization of resources thanks to detailed fault analysis and predictive maintenance
- Permanent condition monitoring of drives or complete drive train
- Process transparency thanks to comprehensive archiving of plant conditions



Answers for industry.

## Condition monitoring with SIPLUS CMS4000: main drive train in press working lines



### SIPLUS CMS4000: Keeping an eye on the main drive train of a press working line

In order to monitor the main drive train with belt drive, flywheel, belt, gearboxes, and bearings in press working lines, sensors are mounted at appropriate positions of the train. The vibration signals recorded by the sensors are processed further via corresponding hardware components, the SIPLUS CMS4000 interface nodes.

The data is analyzed, visualized, and archived using the SIPLUS CMS X-Tools condition monitoring software. Automation components, e.g. of the SIMOTION and SIMATIC systems, can be integrated in X-Tools via software blocks (the software nodes) in order to take additional process signals into consideration during the analysis.

SIPLUS CMS4000 together with appropriate signal processing enables continuous monitoring of the various stages of a press working line for faults in the drives or in the entire drive train. The system's alarm signaling concept transmits a plain text message or an alarm code to the host control system at an early point in time prior to an actual failure. Maintenance engineers can then integrate elimination of the fault in the standard maintenance cycle.

### Advantages at a glance

#### Reduced costs thanks to customized systems

- Simple design and plant integration
- Open standard and flexible expandability
- Web tools

#### Increased efficiency thanks to optimum utilization of resources

- Effective stocking of spare parts
- Plannable maintenance
- Easy cabling

#### Improved scheduling and increased productivity

- Prolonged lifecycle time
- Prolonged maintenance intervals
- High availability and planned downtimes
- Protection of investments

#### Part of Totally Integrated Automation

- Maintenance station
- Process data recording and device diagnostics
- Wear inspection and quality assurance
- Global service / support

[siemens.com/siplus-cms](http://siemens.com/siplus-cms)

Siemens AG  
Industry Sector  
Industry Automation  
and Drive Technologies  
Postfach 23 55  
90713 FÜRTH  
GERMANY

Subject to change without prior notice  
Order No. 6ZB5131-0BC02-0BA0  
MP.R1.CC.0000.86.3.04 / Dispo 46371  
BR 0513 3. SB 2 En  
Printed in Germany  
© Siemens AG 2013

The information provided in this brochure contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.  
All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.