

according to  
Patent EP 1 276 027  
and derivatives

**PROMETEC**<sup>®</sup>  
Monitoring Solutions

NC software solution for tool monitoring

# PROSIN<sup>PLUS</sup>

- excellent retrofitting capabilities
- good value, because no separate hardware must be purchased
- no additional sensors
- for all hardware platforms of the SINUMERIK 810 D, 828 D, or 840 D control systems\*
- ideal for machining centers and drilling machines employed in the mass production of metal components (e.g. in the automotive industry) as well as for manufacturing of small batches (only one workpiece is needed for learning)
- protects machine and tool from static overload
- absolutely minimal scope of operator actions via SINUMERIK operating unit
- fast installation
- detection of missing holes or drills for drilling operations **from a diameter of 2 mm\* in aluminum** (\*size dependent on nominal spindle power)

All you need:  
PROMETEC **PROSIN<sup>PLUS</sup>**  
software and a single  
SINUMERIK licence

*PROSIN<sup>PLUS</sup>: Improved  
in-process breakage detection  
by work value calculation*

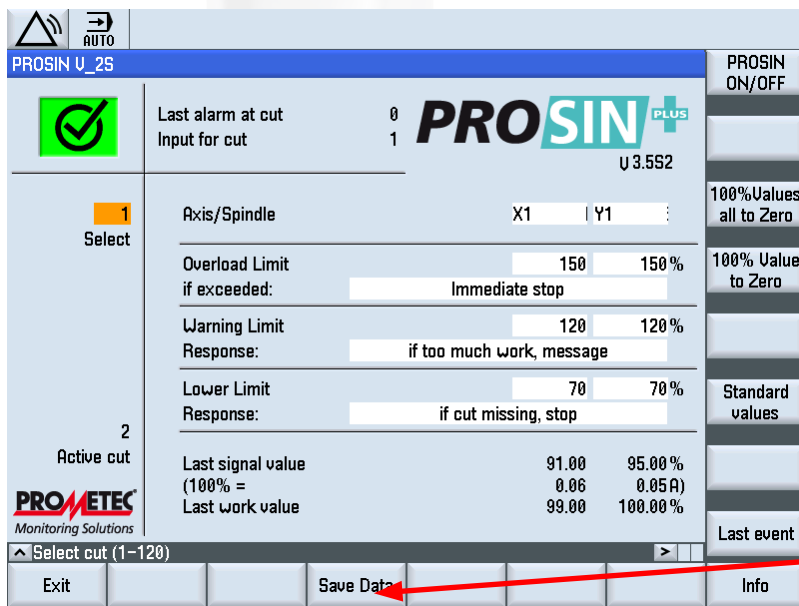
*PROSIN<sup>PLUS</sup>: for small batches AND  
for mass production*

~~additional hardware~~

~~extra sensors~~

~~technology-PC-card~~

*\* over 1,000 systems already  
in use on SINUMERIK 840 D pl.  
Also available for 828 D and  
all 840 D sl with PCU 50 and TCU  
Also available for  
FANUC series 16i 18i 21i 30i 31i 32i 160i  
180i 210i 300i 310i 320i*



Clearly arranged  
**within a single screen:**  
operating status,  
cut number and  
monitoring parameters

operation with SINUMERIK Softkeys  
and number block

Learning of comparison values  
by a push of a button

Variants:  
**for up to four independent or  
synchronous Spindles**

**Saving of monitoring settings per  
work piece**



**also available as version PROSIN-F**  
(without automatic work piece management  
and work value monitoring)  
**for FANUC 16i 18i 21i 30i 31i 32i**

## Economic alternative

Machine tool OEMs are always looking for ways to improve their existing series of machines. One of these improvements for example is objective and repeatable detection of overload situations and of dull, broken or missing drilling tools like fluted drills, thread cutters, reamers, etc.

**PROSIN<sup>PLUS</sup> enables tool monitoring by reading the electrical current values of the digital drives: e.g., if a tool breaks, the current value for the corresponding drive will change, with the current increasing for a dull tool. Additionally PROSIN<sup>PLUS</sup> protects machine and tool holder from static overload, wrong NC parameter input, or faulty clamping of the work pieces.\***

**PROSIN<sup>PLUS</sup> utilises the load sensor signals from the main and feed drives and analyses these signals in accordance with overload, prewarning, and work-under/missing limits for each drilling cut. Up to 120 cuts per work piece are available.**

With **PROSIN<sup>PLUS</sup>**, fluted drills 2 mm in diameter (dependent on nominal spindle power) and larger can be monitored for

breakage when used with steel, cast iron or aluminum. Readout of the actual current values occurs in the interpolation cycle of the controller.

## Clearly arranged interface

A special monitor screen is provided to configure the monitoring settings for the NC program operations, with this screen integrated into the standard user interface of the CNC. This screen allows you to enter and optimize the settings for the cuts to be monitored on one or more tools, and to display the actually measured values. As part of the SINUMERIK Solution Provider Program, SIEMENS certified PROSIN drill break detection software.

This tool monitoring package is of particular interest for mass production of metal parts, such as in the automotive supplier industry as well as for smaller engineering batches where quality needs to be increased while at the same time reducing costs. A further benefit lies in how easy it is to retrofit existing machines, whose functionality can be expanded in very short time.

*\*ask for the success stories of our customers*

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