

Data sheet

orantec

*Tool monitoring for Siemens
Sinumerik 840D control systems*

- in-process monitoring of cutting tools
- missing tool detection of shaft tools
- overload monitoring with fixed limits
- software-only solution
- no sensitive sensors in the machine working area
- monitoring in each NC channel possible
- parameterising of monitoring in the NC program
- graphic interface for clear display of process signals (optional)



Application

Secondary damage resulting from unnoticed tool breakage may occur when incompletely machined parts reach downstream machining stations or even the user. ORANTEC recognises such production faults at the latest during the next machining process with the same tool.



Process visualisation

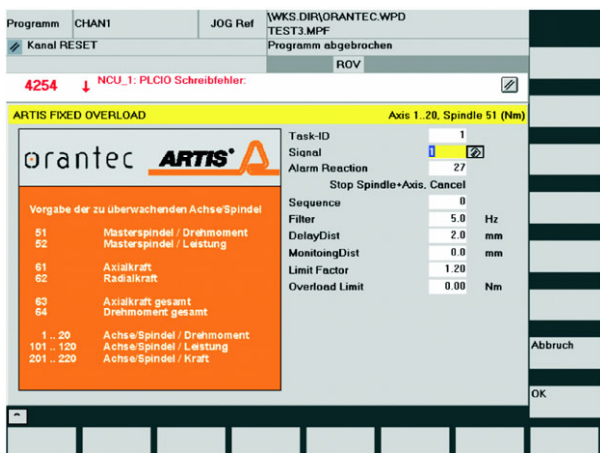
Use

One ideal use of Orantec tool monitoring is to be found in mass production. For this the processes must be easily reproducible, i.e. fluctuations in dimensions and hardness must lie within the normal tolerance range and the spindle speed must be reached before machining commences. In such cases shaft tools with a diameter of 3 mm in steel, depending on the spindle performance, can be monitored for 'overload' and 'missing'. In-process monitoring has the advantage over post-process monitoring (as in optical or mechanical systems) that the process is constantly checked. Likewise no idle time is necessary.

Function

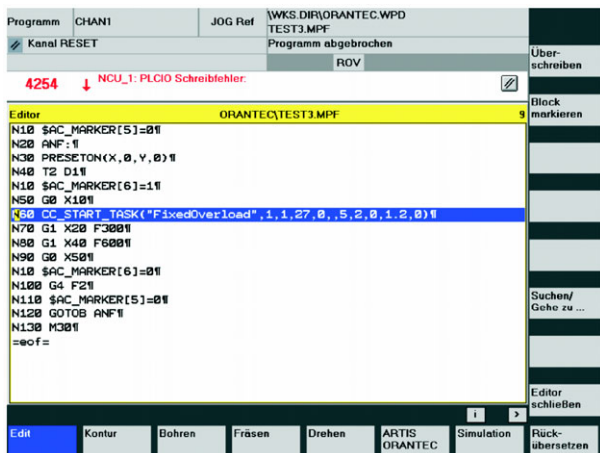
ORANTEC is a monitoring software program based on a Compile cycle, which is installed in the Siemens 840D control system control system (see requirements). In this process the torque data of the spindle and feed drives in the drive controls are evaluated. Monitoring runs entirely in the NC core.

Data sheet ORANTECF Software-only solution for Siemens 840 D control systems



Parameterising via entry mask

Depending on the process, it is possible to change flexibly between the spindle and/or feed axle. For example, evaluation of the feed axle is often better for monitoring small tools.



Parameterising in the NC program

ORANTEC is started up with the aid of its own graphic interface or the Siemens Tool SinuComNC. The limit values for overload monitoring are automatically defined or can be entered via entry masks in the NC program editor.

Features of ORANTEC

- Software solution for Siemens Sinumerik 840D control systems
- Monitoring can be activated for each NC channel so that several machining stations can be monitored in parallel
- Monitoring of up to 10 rotating shaft tools for missing or overload
- Minimum effective diameter of the tools to be monitored: 3 mm in steel (depending on spindle performance)
- Evaluation of internal drive data (no sensor installation)
- Own graphic visualisation interface (optional)

Control requirements

- Sinumerik 840D powerline:
 - NCU 573.3-5, NCU 572.4-5, NCU 571.4-5
 - NC software version as of 6.05.xx
 - PCU 20
 - PCU 50/70 if the optional graphic interface is used
- Sinumerik 840D solutionline:
 - TCU
 - NC software version as of 07.xx.xx
 - PCU 50/70 if the optional graphic interface is used

Scope of delivery

- installation manual
- operator manual with examples
- CD with Compile cycles (ELF files)
- example NC programs

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