

## Measuring and monitoring of vibrations, in-situ balancing

### Integrated Balancing System AB 9100



#### Advantages

- Integrated solution, no external systems required
- Permanent vibration monitoring
- Link to machine control
- Balancing at very high speeds
- Windows software for setup and operation
- Field balancing software supports many unbalance correction methods

#### Application

- Manual correction of operational unbalance
- Online monitoring of unbalance induced vibrations

#### Typical applications

- Balancing of grinding wheels and grinding spindles inside the machine tool
- Compensation of toolholder unbalance with HSC spindles
- Compensation of non-symmetric parts with lathes
- Balancing and monitoring of large fans
- Balancing and monitoring of rotors with test stands

#### Description

In-situ balancing of grinding wheels, machine tool spindles or fans normally is performed using portable Hofmann field balancing instrumentation. Therefore first the vibration and speed sensors have to be attached to the balancing object. Then they will be hooked up to the balancing instrument. Prior to balancing one should check whether unbalance really is the source of vibrations. If yes, a calibration is being performed until the instrument presents to unbalance to be corrected. After completion of balancing the measuring equipment will be dismantled again.

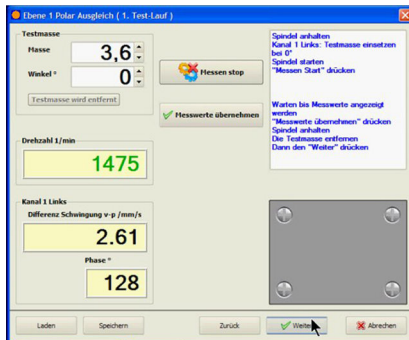
In case a balancing system AB 9100 is being used, that effort reduces to just the unbalance correction. Because that system will be integrated into the machine.

It continuously monitors the vibrations. And it indicates to the machine control an event as soon as the vibration exceeds a preset limit. A necessary unbalance correction may then be done very quickly, because the calibration is available already since the commissioning of the system. As a result the unbalance correction is now directly shown.

A PC software is being used to setup and operate the AB 9100 and to guide the operator through the balancing process. It may be installed on an external PC or laptop. It also may be installed on the PC of a machine's PLC.

## Technical Data

<b>Measuring Controller AB 9100</b>	
Number of correction planes	1 or 2
Unbalance correction method	polar, components, spread-angle
Measuring channels	2
Speed range	200 to 120,000 1/min
Speed sensor	induktiv or optical
Vibration sensor	accelerometer, type HMA or velocimeter, type PMG 81
Vibration units	$\mu\text{m}$ , mm/s, m/s <sup>2</sup> , g
Measuring range	0,01 to 1.000 (depending on speed and vibration sensor)
Interface to PC	RJ 45
Interface to PLC	D-Sub 25 pins and D-Sub 9 pins
Dimensions (WxHxD) in mm	210 x 120 x 280
Power supply	230 V, 50 - 60 Hz, 400 W



Recommended minimum system requirements:

- Pentium III 500 MHz Processor with 512 MB RAM
- 60 MB available hard drive space
- CD-ROM drive or USB port
- free RJ45 network connection
- SVGA monitor with a resolution of 800 x 600
- Operating system Windows 2000, XP or 7

CS 9000 operator interface

## Scope of supply

- Measuring controller AB 9100
- PC software CS 9000
- Operation manual
- Vibration sensor
- Speed sensor
- Cable set

## Options

- Panel PC
- Upgrade to active balancing system AB 9000

All information without obligation, subject to change without notice!