



## OPTIMIZE YOUR GRINDING PROCESS.

PREVENT CRASHES.  
SAVE SETUP AND ELIMINATE GAP TIME.  
CUT CYCLE TIME BY 20%.

### Model 5522 AEMS Acoustic Emission Monitoring System

The SBS AE Monitoring System saves time and money.

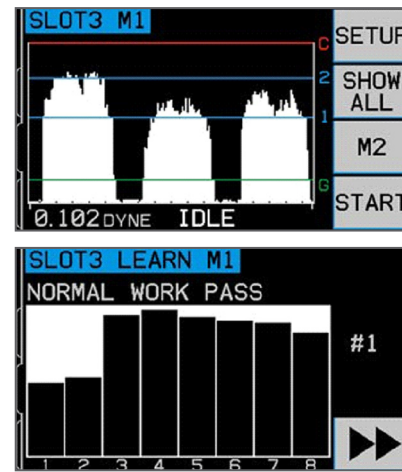
It eliminates air grinding gap time and alerts the operator of crash conditions by using proprietary acoustic detection technology to monitor and analyze the high frequency signals generated by the grinding process.

The AEMS reports initial contact between the wheel and a new part to the machine control system so it can stop wheel in-feed without operator intervention, which can save up to 20% of the typical cycle time. It can also detect and report abnormal contact from an incorrectly loaded part or fixture within milliseconds, allowing the in-feed to be stopped, avoiding a crash, damage or injury. SBS AE monitoring is a significant contributor to continuous improvement programs.

Position control, used to zero the machine before beginning a grinding or dressing cycle, is possible by detecting the edge of the wheel touching a reference point known to the machine CNC. The CNC thereby can determine the exact position and diameter of a changing grinding wheel.

Monitoring for normal acoustic levels during wheel dressing permits the operator or CNC control to (1) determine if the wheel is being dressed fully across its width, (2) control the aggressiveness of the process, and (3) maintain the quality of the dressed wheel to conserve wheel material.

The AEMS works with a variety of SBS acoustic sensors, all of which are easy to retrofit. They are highly resistant to grinding machine coolants and grinding paste. Their reaction speeds are significantly faster than traditional methods of spindle load or alternative monitoring devices.



#### BENEFITS:

- Cut cycle time and increase productivity by 20% or more
- Increase throughput with less setup
- Eliminate gap time with automatic grind in-feed
- Improve part quality with precise grind/dress monitoring
- Prevent crashes, damage, and injury
- Automate shut-down on detection of extreme contact
- Extend life of grinders, dressers, and spindle bearings

#### FEATURES:

- Four-channel capability permits balancing and monitoring of multiple machines
- Control a wide range of grinding machine types/brands
- Easy to install and operate
- Sensor options accommodate diverse environments
- Communications versatility: Profibus, Ethernet and USB
- Enables CNC machines to re-position wheel at zero
- International adaptability: voltage, frequency, communication, and display language
- Backed by world-class, worldwide SBS customer service



## SPECIFICATIONS

### Physical Features of AEMS with SB-5500 Controller

#### Multiple Device and Function Control:

**Four (4) available slots accept control cards for various grinder control functions such as AEMS:**

SB-5522 Acoustic Emissions Monitoring System (AEMS)

- Compatible with existing SB-4500 control installations
- Operates with existing SBS balancers, sensors, and CNC/PCL hardwire interface

Other control cards are available for various balancer configurations or for process control monitoring.

#### Display:

Type: Color TFT LCD  
Active area: 480 H x 272 V pixel  
2.74 inch [95 mm] x 2.12 inch [53,86 mm]

#### Multi-language Capability:

English, Chinese, French, German, Italian, Polish, Russian, Spanish, Swedish

### Acoustic Emission Signal

#### Display:

Graphical display of AE signal level relative to selectable process limits AE Level display in Dyne units

#### Gain Control:

Range: 0–77db

### Power Supply

#### DC or AC Power Options:

**DC Supply:** Input 21 VDC to 28 VDC. 5.5A max at 21 VDC. Reverse voltage protected.

**AC Supply:** 100–120 VAC, 50/60 Hz, 2A max;  
200–240 VAC, 50/60 Hz, 1A max.

Main supply voltage fluctuations not to exceed +/-10% of nominal supply voltage

### Safety and Environmental

#### Certifications:

ETL and CE certified

#### Environmental and Installation Conditions:

- Pollution Degree 2, Installation Category II
- Intended for indoor use only
- IP54, NEMA 12
- Temperature range: 5°C to +55°C
- Humidity: 0 to 85% relative humidity (non-condensing) throughout temperature range

### Communications Interfaces

#### Environmental and Installation Conditions:

- Ethernet TCP/IP
- USB 2.0
- Profibus DP
- CNC/PLC Hardwire Interface (Opto isolated outputs)

#### Relay Inputs:

- Mode 1 selection
- Mode 2 selection
- Front Panel Inhibit
- Crash Reset

#### Relay Outputs (Response time: < 5 ms):

- Gap level reached
- Limit 1 reached
- Limit 2 reached
- Crash limit exceeded
- Analog AE signal level

For more information on SBS products, see [AccretechSBS.com](http://AccretechSBS.com) to find your local SBS distributor or Representative, or call Accretech SBS, Inc.



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