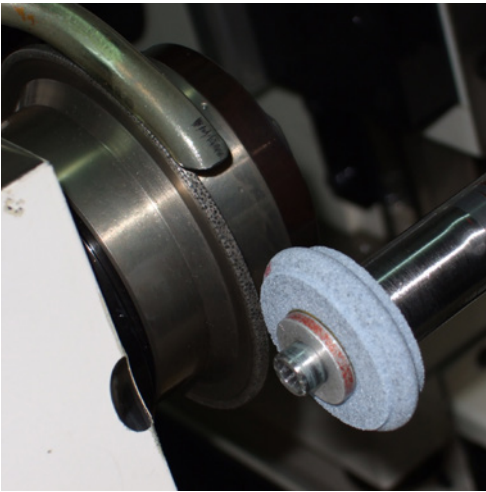


VM9-TD

TOUCH DETECTION AMPLIFIER
FOR GRINDING MACHINES



Touch detection system for machine tools based on the use of acoustic emission sensors (AE). It is designed for simple and cost-effective applications and allows to:

- Identify the instant of the end of the cutting in the air (GAP function)
- Preventive monitoring (Anti-CRASH function)
- Control the dressing process

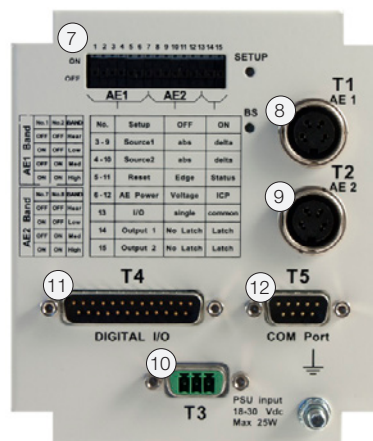
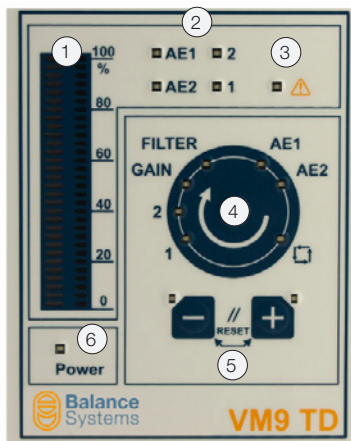
Features

- Management of 2 independent channels for AE sensors, including diagnostics
- Integration with the machine controller in safety mode
- Wide range of AE sensors (static assembly and built-in spindle)
- AE level displayed on led bar graph
- Two control limits (i.e. end of the cutting in the air, anti-crash) with the signal processing both in instantaneous and in differential mode

Benefits




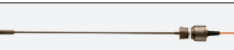


- Reduces cycle times
- Improves safety and reduces maintenance costs
- Extends lifetime of the tools (i.e. grinding wheel, dressing unit)
- Does not require surveillance
- Can be implemented in any type of grinding machine, both new and retrofitting

Configuration



- ① Led bar for the indication of acoustic emissions level
- ② Led lights of the programmed contact limits
- ③ Status signalling
- ④ Selector for parameters setup and operating mode
- ⑤ Multi-function keyboard
- ⑥ Led light for a correct power source
- ⑦ Dip switches for hardware and software configuration
- ⑧ [T1] Input for acoustic emission sensor No. 1
- ⑨ [T2] Input for acoustic emission sensor No. 2
- ⑩ [T3] Power source
- ⑪ [T4] Digital I/O
- ⑫ [T5] RS232 serial interface (for service operation)

Range of Acoustic Emission sensors

Type		Mounting
	AE Ultrasonic	Static (machine table, work head body, tailstock body, dresser body, spindle body, etc.)
	AE Single Point	Static (machine table, work head body, tailstock body, dresser body, spindle body, etc.)
	AE nose (contact less)	Spindle nose (OD and ID grinding spindle, dressing spindle, etc.)
	AE Built-in (contact less)	Built-in spindle (OD and ID grinding spindle, dressing spindle, etc.)
	AE Ring (contact less)	Outside coaxial device to rotor (OD and ID grinding spindle, dressing spindle, work head, tailstock, etc.)
	AE Fluid	Static and crossed by coolant (grinding area, dressing area, etc.)

Technical data

Versions	Rack and table mounting
Power source	18-30 Vdc – max 30 W
No. of channels for AE sensors	2
Working frequency bands	4 – Programmable 1 kHz – 1 MHz
Signal processing	Instantaneous / differential with programmable filters
Controls	End air-cut and anti-crash
No. of control limits	2 - Programmable
Interface with PLC/NCU	Digital I/O, 24V opto-isolated sink-source, D-Sub connector with 25 pole
Output response time	< 1 ms
Output signalling mode	Latch / No latch
Working temperature range	0° .. 55° C
Working relative humidity range	0 .. 98 % without condensation
Protection degree (IEC 60529)	IP54 (front side – dashboard panel) – IP20 (rear side)
Keyboard	Multi-function with 3 buttons
Display	Led bars
Serial interface (for service operation)	RS232
Size (WxHxP)	108 x 133 x 78 mm
Weight	1 kg



Specifications may be subject to change without notice. © 2015 | 09 | Balance Systems S.r.l.

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