

PROTEC Process Monitor

Compact Process and Tool Monitoring



Sensors: Force, vibration, structure-borne sound, vibration speed; preamplifiers in casing

for Single-Purpose Application

Monitoring of a cut respectively a machining operation, collision monitoring

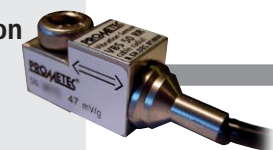
Overload, Missing and Contact Limit process set-up by push-buttons and switches protected in the same housing, no Teach-In required

PROTEC PES for piezoelectric sensor signals, force sensors, in form of Measuring Pill, Measuring Cell, Measuring Wedge, Measuring Dowel, Measuring Bolt, etc.



PROTEC VBS-VA for monitoring of vibration acceleration

PROTEC VBS-VV for monitoring of vibration velocity/unbalance



ICP[®]-based vibration sensors, VBS sensors in different configurations

PROTEC AES 30 for structure-borne sound sensor AE 30



Process Monitor PROTEC PES (for piezoelectric force sensors) for Process-accompanying and **continuous monitoring of process forces** at die cutting and bending operations, process forces at joining- and pancaking operations, all further production processes, which are carried out by applying forces at work pieces. **Tool and process monitoring** of machines and systems as well as quality assurance are further areas of application.

For example: **press capacity monitoring** on forming-, punch- and bending presses, achieved by elongation measurements on the press frame or **Mould protection** on plastic injection moulding- and aluminum die-cast machines etc. (photo: Tünkers, press capacity monitoring)



Process Monitor PROTEC VBS (for vibration sensors) **process-accompanying and continuous monitoring of acceleration/vibration signals** from all machining processes for a fast-stop of the machine at collision. **Also available as a variant for monitoring of vibration speed/unbalance.**

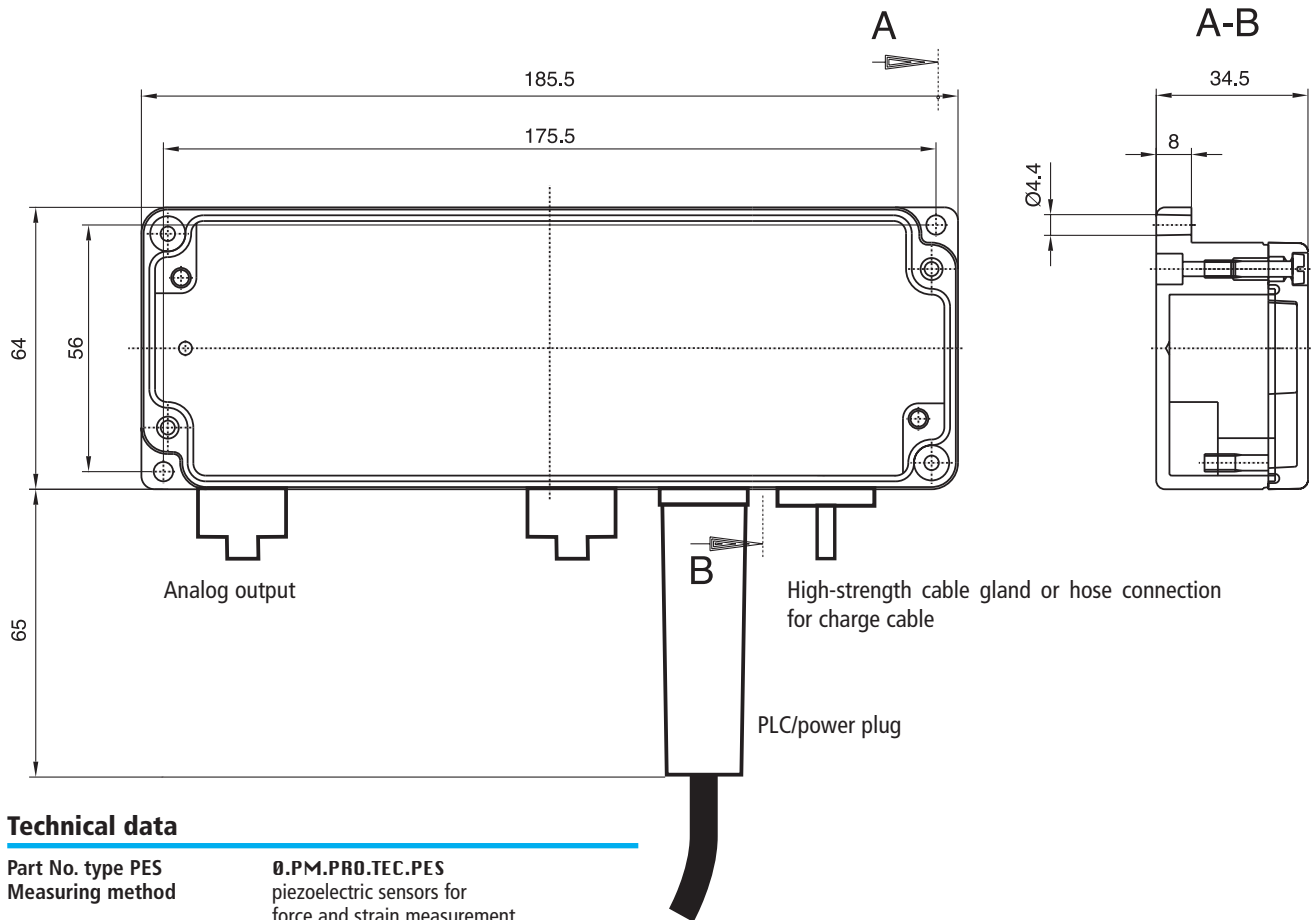
Process Monitor PROTEC AES 30 (for PROMETEC Ultra Sound and Vibration Sensor AE 30) for **process monitoring on grinding machines.** Tool and process monitoring of machines and systems as well as quality assurance are further areas of application.

Examples are the use of ultra sound and vibration sensors to detect tool-workpiece contact in ultrasonic lapping operations resp. drill breakage detection or detection of missing tools. In simple turning applications, for example plunge or parting off operations, the ultra sound and vibration sensor can also be used.

for

- Lathes
- Machining Centers
- Transfer Lines
- Rotary Machines
- Robots
- Compressing, Joining
- Grinding Machines

Measurements

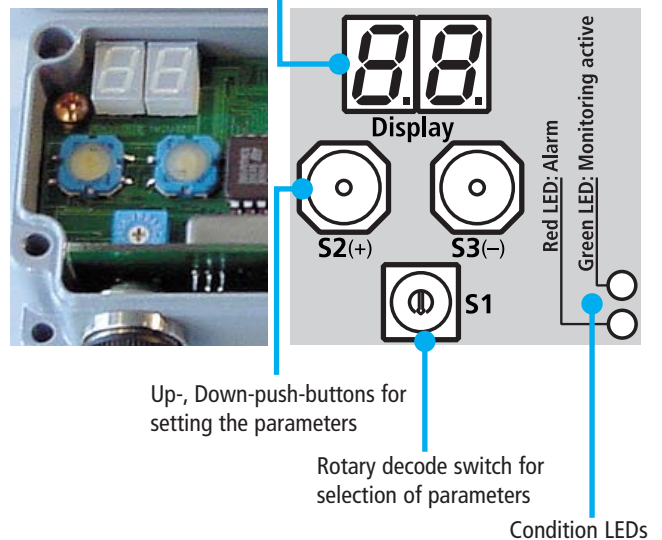


Technical data

Part No. type PES	0.PM.PRO.TEC.PES
Measuring method	piezoelectric sensors for force and strain measurement
Part No. type VBS-VA	0.PM.PRO.TEC.VBS
Measuring method	vibration sensors with ICP® interface (acceleration measurement)
Part No. type VBS-VV	0.PM.PRO.TEC.VBSVV
Measuring method	vibration sensors with ICP® interface (vibration velocity/unbalance)
Part No. type AES 30	0.PM.PRO.TEC.AES30
Measuring method	structure-borne sound with AE 30 Sensor
Interfaces/connections	1 Sensor input 1 analog output 2 digital inputs 3 digital outputs, optical decoupled
Limits	2 independent, freely configurable (e.g. 2 Overload limits, 1 Overload + 1 Contact limit, or 1 Overload + 1 Missing limit)
Digital inputs	24V, 10mA
Digital outputs	24V, max. 10mA
Analog output	0 ... 10 V / 0(4) ... 20 mA
Limit settings	0...100%
Delay time	0...99ms
Power supply/-consumption	24VDC, approx. 10mA
Protection	IP67 (DIN 40050)
Temperature range	-10 ... 60°C [14 to 140° F]

Operating and visualization

Seven segment LEDs display the chosen or measured values



Subject to technical modifications
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Monitoring of Machines, Processes, Tools and Lasers
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