PROMETEC®
Monitoring Solutions

Process Listening System PLS 20

lets you listen in to processes on enclosed machines

- ***acoustic contact detection between tool and workpiece*** *audible through headset using acoustic emission sensor*
- *enables starting of the process at an* ***exact contact point*** *after stoppage or at set-up*
- ***Increase of process assurance and process optimization*** *through operator via acoustic process monitoring:*

  Structure-bourne sound and vibration sensor at workpiece or tool holder

  Signal adaptation, transmitter, headphone

Foto: Audi

The many regulations in force for the encapsulation of machine tools according to ISOP, EN and DIN provide the machine operator with excellent protection against noise, coolants, chips, dirt and risks from the machining process.

But encapsulation makes it harder for the operator to hear what is happening in the process and to monitor or check process events. For safety reasons, he cannot open the capsule, and opening it may interrupt the process and involve longer production times.

The Process Listening System PLS 20 brings the operator's ear back up close to the machining process.

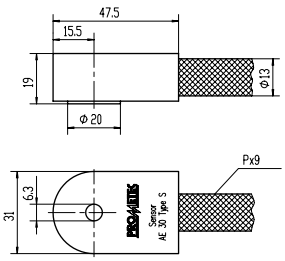
A structure-borne sound sensor is screw-fixed close to the machining point, on machine components like headstocks, carriages, tables etc., or magnet-attached directly on the workpiece, tool or holder. A special listening amplifier conditions the signals for the human ear, so that the operator can hear the machining noise in his earphones just as if he had his ear right on the cutting edge.

Apart from acoustic tool condition and process checks in mass production, the listening system is also extremely useful for setting up the machine. In one-off and small-batch production, it has proved its usefulness for tool-workpiece contact detection, allowing manual control of feed rates, or for zeroing (e.g. in gear tooth flank machining). Apart from monitoring the behaviour of encapsulated machine tools, the listening system is a useful aid for checking running and bearing noise on all types of plant and machinery.

The **Process Listening System PLS 20** is composed of the components described overleaf (ultra sound and vibration sensor AE 30, listening amplifier and headphones), which are available in different configurations depending on requirements. For a fixed installation the sensor is bolted to the surface, for flexible mounting a magnet can be used. In connection with a PROMOS Monitoring System the listening amplifier can be connected to a preamplifier KSV with 2 inputs for ultra sound an vibration sensor AE 30.

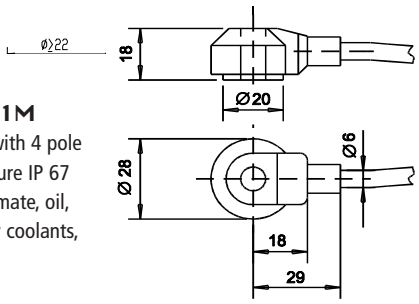
PROMETEC Monitoring Solutions

Ultra sound and Vibration Sensor AE 30



Type S, Part No.:
017.130.AESRC4-1M

Cable length 850 mm, with 4 pole round plug M12 and metal braided protection hose (ends approx. 100 mm before plug), enclosure IP 68 (salt spray, industrial climate, oil, aggressive coolants, chip protection).

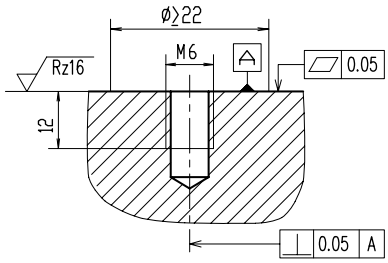


Type O, Part No.:
017.129.AEORC4-1M

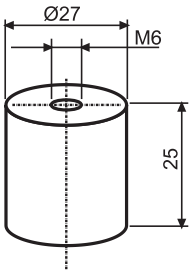
Cable length 850 mm, with 4 pole round plug M12, enclosure IP 67 (salt spray, industrial climate, oil, environmentally-friendly coolants, chip protection).

Surface for screw fitting

for fixed mounting of AE 30 sensors to machine parts (headstocks, carriages, tables etc.).



Magnet fittings for AE sensors



Type HM 27, Part No.: **019.403.HM27...**
HM35-M6
...HM27 for AE 30 Type O,
[**..HM35** for AE 30 Type S]
for flexible fitting of AE 30 sensors to workpieces, tools, holders or machine parts.

Connection respectively extension cable

Part No.: **0.CP.AE3.RP4-XX** connection cable for AE 30 sensors, 5 m or 10 m, 4 Pole Round Socket M12 (coupling) on cable end sleeve

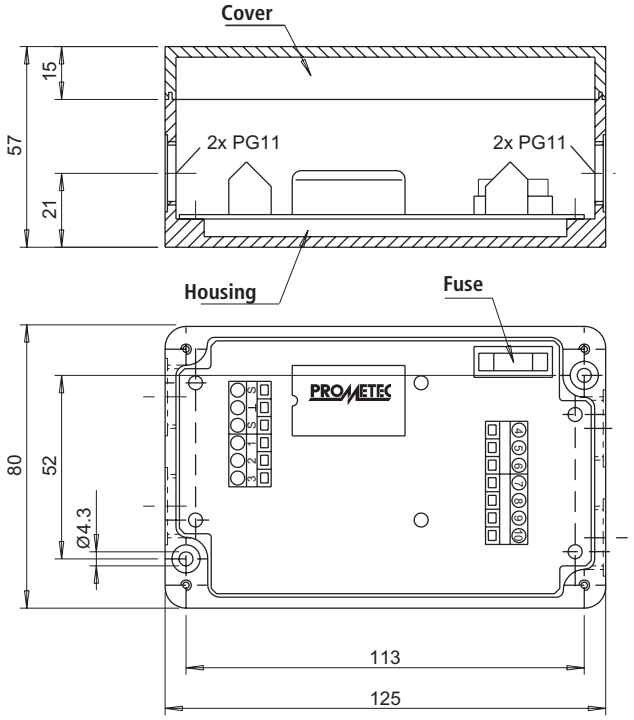
Learn more about further possible cable lengths and connection options on the AE 30 sensor data sheet.

Wireless headphones

Part No.: **051.538.KHL2**

Brand AKG, Type K 920 AFC or later model, weight 230 g, semi-open, qualified for shop floor use, wireless range 100 m, volume control on headphones, up to 3 headphones per transmitter and up to 4 transmitters per 100 m.

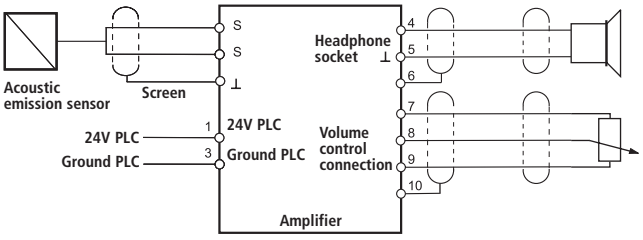
Listening amplifier Types I and E



Type I, Part No.: **097.813.KSUHS1**
Amplifier in housing; integrated volume control and headphone socket (6.3 mm jack) in amplifier cover.

Type E, Part No.: **097.813.KSUHSE**
Amplifier in housing; external volume control and headphone socket (6.3 mm jack) are connected to the amplifier via special cables (supplied with the package - L = 50 cm) and single-hole PG unions (see connection diagram).

Connection diagram



Technical data

Supply	24 V DC ±20%
Output	32 Ω, 200 mW
Frequency range	50 to 15,000 Hz
Gain	40 dB, continuously adjustable
Temperature range	10 to 60°C (50 to 140°F)
Protection class	IP 40

Monitoring of Machines, Processes, Tools and Lasers
Subsidiary companies and representations in Europe, South-America and Asia
www.prometec.com

Germany (Headquarters)
PROMETEC GmbH
Jülicher Str. 338
52070 Aachen
Phone: +49 241 16609-0
Fax: +49 241 16609-50
prometec-de@prometec.com

USA
PROMETEC Inc.
47711 Clipper Street
Suite 200
Plymouth, MI 48170
Phone: +1 (734) 455 0100
Fax: +1 (734) 451 4654
prometec-us@prometec.com

England
PROMETEC Ltd.
41 Church Street
Birmingham West Midlands
B3 2RT
Phone: +44 7971 475134
prometec-uk@prometec.com

Italy
PROMETEC S.r.l.
Viale Ticino, 54
21026 Gavirate (VA)
Phone: +39 0332-1950049
Fax: +39 0332-744952
prometec-it@prometec.com

Eastern Europe
PROMETEC Bratislava
Šustekova 12
SK 851 04 Bratislava
Slovakia
Phone: +42 1263 531211
Fax: +42 1263 531212
prometec-sk@prometec.com

India
PROMETEC GmbH India Branch Office
#1066, 15th Cross, 25th Main
Banashankari-2nd stage
Bangalore-560 070
Phone: +91 (0)80 2671 2220
Fax: +91 (0)80 2671 2199
prometec-in@prometec.com