

CA 188 & Accessories

Piezoelectric Accelerometer Type CA 188

FEATURES - CA 188

- General purpose, industrial accelerometer
- Differential output
- Hermetically welded
- Internal case insulation
- Frequency range 2 Hz to 6000 Hz
- Sensitivity:
20 pC/g
- Temperature range:
54°C to +250°C
- Weight:
90 g

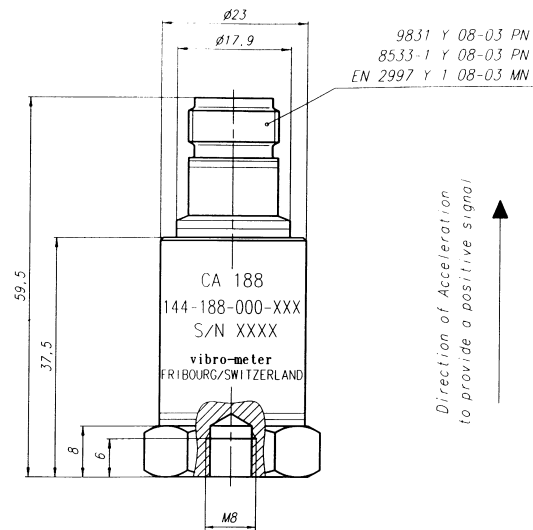


DESCRIPTION - CA 188

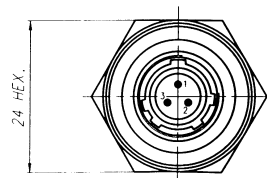
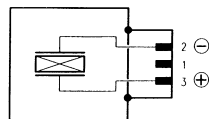
The CA 188 Piezoelectric Accelerometer has been designed to monitor vibration on industrial machines. It is a rugged, hermetically welded, medium temperature accelerometer. It is equipped with a compression mode piezo-ceramic sensitive element which is insulated from the case.

The installation of the accelerometer is greatly simplified by the single M8 threaded hole and the MA 118 Mounting Adapter.

MECHANICAL DIAGRAM - CA 188



Connection diagram



SPECIFICATIONS - CA 188

GENERAL

Input power requirements	: None
Signal transmission	: 2 pole system insulated from casing, charge output
Sensitivity (at 120 Hz)	: 20 pC/g $\pm 5\%$
Dynamic measuring range (random)	: 0.001 g to 200 g peak
Overload capacity (spikes)	: Up to 250 g peak
Linearity	: $\leq 1\%$ between 0.001 g and 20 g peak
Transverse sensitivity	: $\leq 5\%$
Resonant frequency (mounted vibration)	: 40 kHz typical
Frequency response	
• Between 2 and 6000 Hz	: $\pm 5\%$
• At 8 kHz typical	: $+5\%$
• At 10 kHz typical	: $+10\%$

Dynamic calibration at factory at 1 g peak and 120 Hz (+23°C). No subsequent calibration necessary.

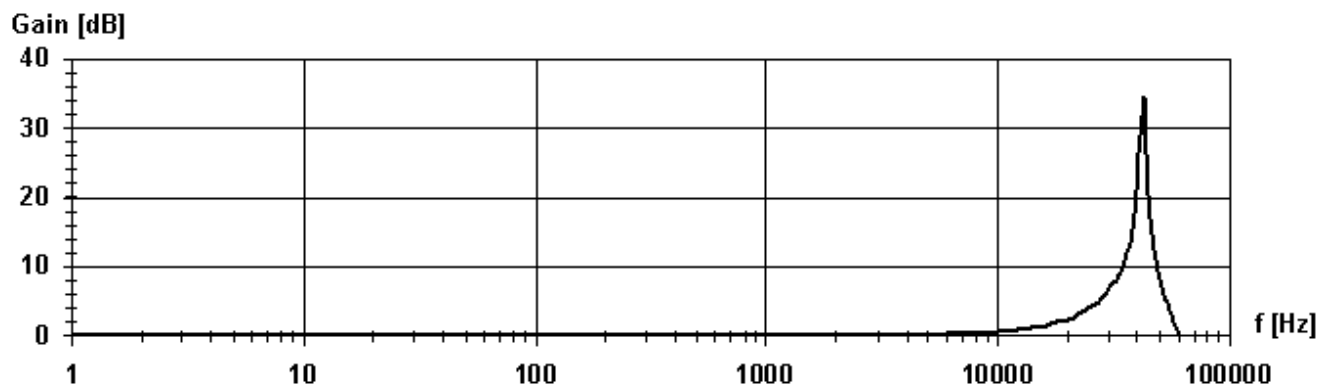
ENVIRONMENTAL

Temperature range	
• Operating	: -54°C to +250°C
• Short-term survival	: -70°C to +270°C
Temperature error (typical)	
• -54°C to +23°C	: $\leq -5\%$
• +23°C to +200°C	: $\leq +10\%$
• +200°C to +250°C	: $\leq +18\%$
Shock acceleration	: ≤ 1000 g peak (half sine 1 ms)
Base strain sensitivity	: $\leq 5.10^{-7}$ g/ $\mu\epsilon$

MECHANICAL

Material	: AISI 316L stainless steel, hermetically welded
Mounting	: Max. torque 10 Nm

TYPICAL FREQUENCY RESPONSE - CA 188



ORDERING INFORMATION - CA 188

To order please specify :

Type	Designation	Ordering Number
CA 188	Piezoelectric Accelerometer	144-188-000-11

DESCRIPTION - EC 268 AND EC 276

These low-noise cables assemblies are designed to connect the CA 188 accelerometer to the charge amplifier. They have excellent mechanical resistance and are also resistant to chemical products such as acids, alkaline solutions and oil.

The cable assemblies are available in different lengths.

The Connectors are self-locking and do not release when exposed to vibration.

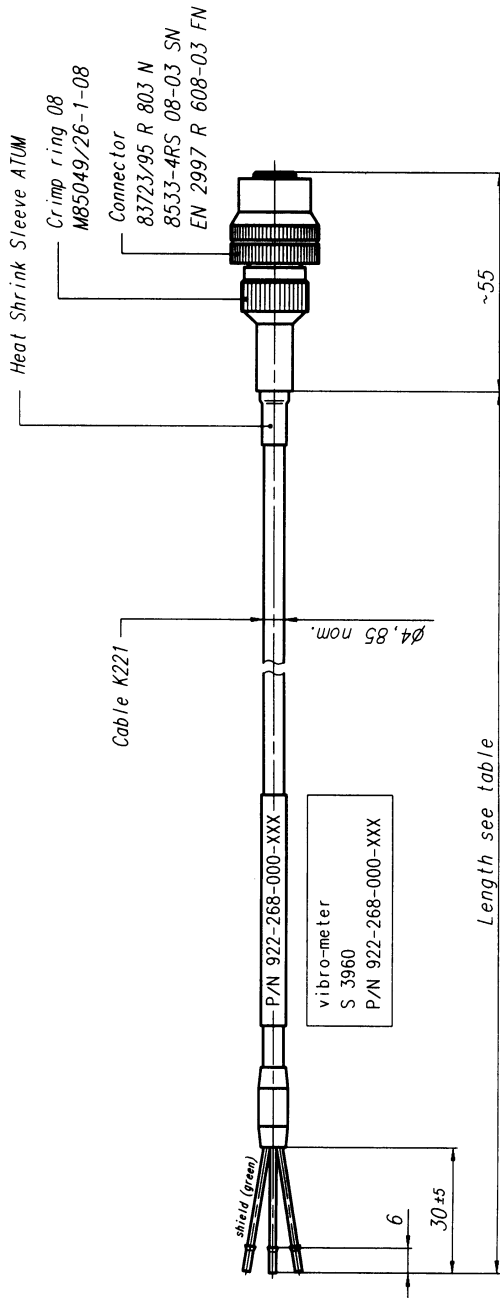
MECHANICAL SPECIFICATIONS - EC 268 AND EC 276

Construction	: According to MIL-C-27500A specifications
Conductors	: 2 x 0.45 mm ² stranded silver plated copper cores
Conductor insulation	: Teflon PTFE and anti-microphonic noise tape
Shield	: Silver plated copper braid
Operating temperature	: -54°C to +200°C
Min. bending radius	: 50 mm
Outer sheath	
• EC 268	: White extruded PFA
• EC 276	: Glass fibre & stainless steel overbraids
Cable diameter	
• EC 268	: Ø 4.85 ±0.2 mm
• EC 276	: Ø 6.2 ±0.2 mm
Weight	
• EC 268, 3 m	: 200 g + 46 g per additional meter
• EC 276, 3 m	: 200 g + 100 g per additional meter
Connectors	
• Type	: 83723/95 R 803 N, self locking
• Material	: Stainless steel

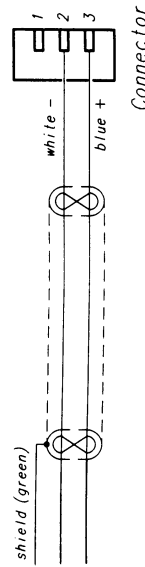
ELECTRICAL SPECIFICATIONS - EC 268 AND EC 276

Insulation resistance	: > 10 ¹² ohm/m at +23°C
Dielectric test voltage	: 2000 V _{RMS} , 50 Hz, 1 min.
Core resistance	: 40 mΩ/m
Capacitance	
• Core/core	: 100 pF/m
• Core/shield	: 200 pF/m
Microphonic noise	
• Tested at 2 Hz	: ≤ 10 pC peak-to-peak with 40 mm peak-to-peak displacement
• Tested between 5 and 50 Hz	: ≤ 1 pC peak-to-peak with 5 mm peak-to-peak displacement
• Tested between 10 and 70 Hz and 20 g peak acceleration tested up to 3000 Hz	: ≤ 0.15 pC peak-to-peak with 2 mm peak-to-peak displacement

MECHANICAL DIAGRAM - EC 268



Connection diagram



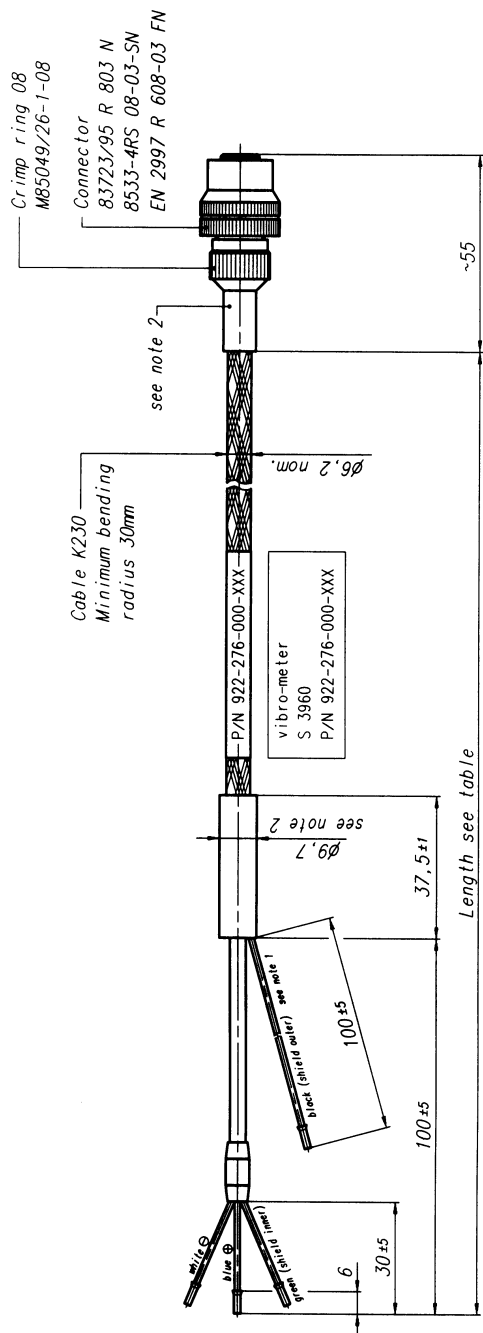
ORDERING INFORMATION - EC 268

To order please specify :

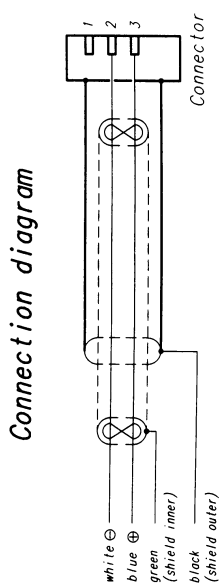
Type and designation: EC 268 Cable Assemblies

Length	3 m	6 m	9 m	12 m
Ordering Number	922-268-000-011	922-268-000-021	922-268-000-031	922-268-000-041

MECHANICAL DIAGRAM - EC 276



Note 1 : The outer shield can only be connected if the measuring chain is equipped with a galvanic separation unit.
 Note 2 : Sleeve and crimp ring termination surface may have crimping marks.



ORDERING INFORMATION - EC 276

To order please specify :
 Type and designation: EC 276 Cable Assemblies

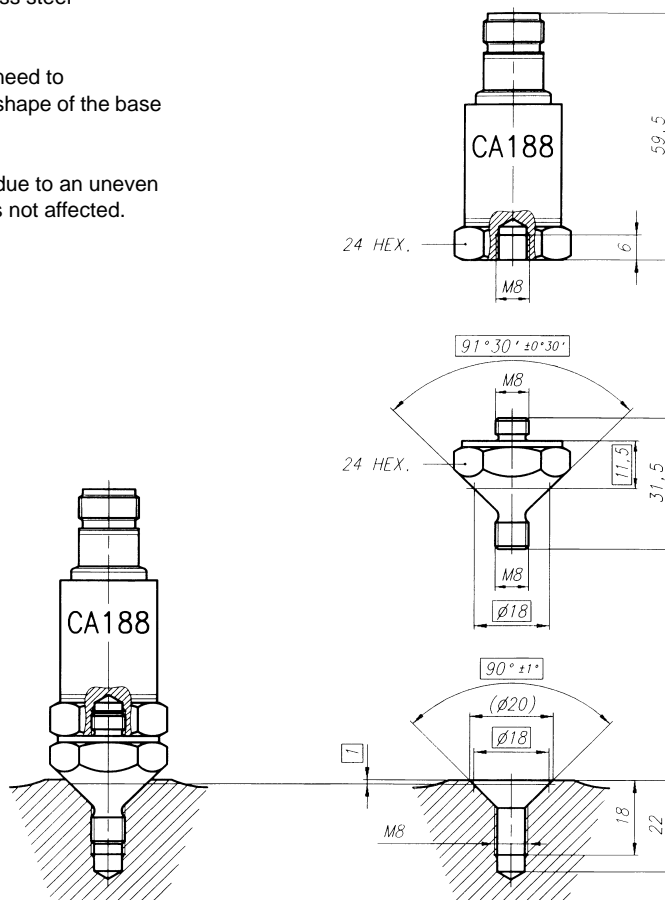
Length	3 m	6 m	9 m	12 m
Ordering Number	922-276-000-011	922-276-000-021	922-276-000-031	922-276-000-041

DESCRIPTION - MA 118

The MA 118 Mounting Adapter is made of stainless steel (DIN 1.4305). It has been designed in order to:

- Ensure a good quality, rigid fixing, without the need to sophisticated tools. This is thanks to the conic shape of the base of the stud.
- Avoid mechanical stress in the accelerometer due to an uneven mounting surface. The reliability of the signal is not affected.

Max. torque: 10 Nm
Material: Stainless steel



ORDERING INFORMATION - MA 118

To order please specify :

Type	Designation	Ordering Number
MA 118	Mounting Adapter	809-118-002-011



In this publication, a dot (.) is used as the decimal separator and thousands are separated by spaces. Example : 12 345.678 90. Although care has been taken to assure the accuracy of the data presented in this publication, we do not assume liability for errors or omissions. We reserve the right to alter any part of this publication without prior notice.

Sales offices

Vibro-Meter has offices in more than 30 countries. For a complete list, please visit our website.

Your local agent

Head office

Vibro-Meter SA
Rte de Moncor 4
P.O. Box
CH-1701 Fribourg
Switzerland

Tel: +41 26 407 11 11
Fax: +41 26 407 13 01

www.vibro-meter.com

