

## Piezoelectric Pressure Transducer

### FEATURES

---

- ▶ Extreme temperature capability -70°C to +520°C
- ▶ High-pressure capability 350 bar
- ▶ High reliability
- ▶ Internal case insulation
- ▶ Certified for use in potentially explosive atmospheres
- ▶ Sensitivity  
200 pC/bar (typical)
- ▶ Weight  
Transducer: 12 g  
Integral cable: 25 g/m



### DESCRIPTION

---

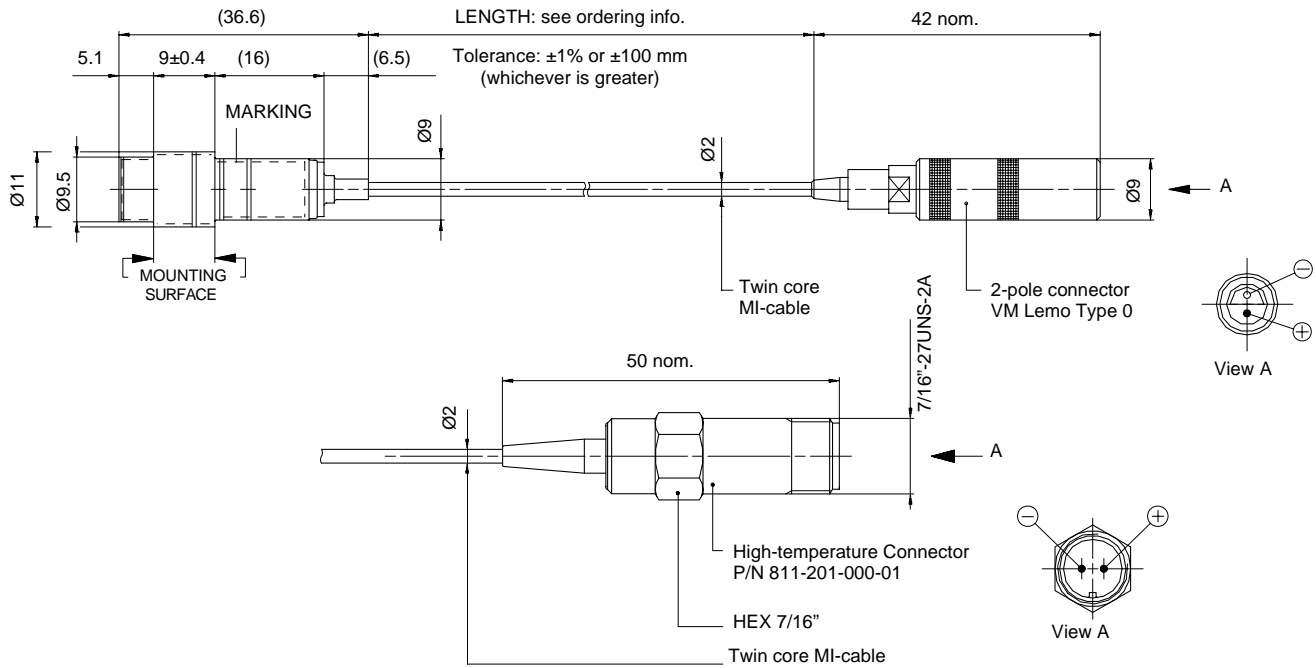
The CP 216 is a compression mode dynamic pressure transducer. It is an extremely stable device thanks to the use of man-made piezoelectric material.

The transducer is designed for long-term monitoring or development testing. It is fitted with an integral mineral insulated cable (twin conductors) which is terminated by either a Lemo connector or a high-temperature connector developed by Vibro-Meter.



The information contained in this document may be subject to export control regulations of the European Community, USA or other countries. Each recipient of this document is responsible for ensuring that the transfer or use of any information contained in this document complies with all relevant export control regulations. ECN N/A.

**MECHANICAL DRAWING**



**SPECIFICATIONS**

**ELECTRICAL**

Input power requirements	: None
Signal transmission	: 2-pole system insulated from casing, charge output
Signal processing	: Charge converter

**OPERATING**

(at +23°C ±5°C)

Sensitivity (at 2 Hz)	: 200 pC/bar typical
Dynamic measuring range (random)	: 0.0005 bar to 250 bar nominal
Overload capacity (spikes)	: Up to 350 bar
Linearity	: ± 1% over dynamic measuring range
Acceleration sensitivity	: ≤ 0.5 pC/g (≤ 0.0025 bar/g)
Resonant frequency	: > 80 kHz
Frequency response	: 2 to 15 000 Hz ±5% (lower cut-off frequency is determined by the electronics used)
Internal insulation resist.	: Min. 10 <sup>9</sup> Ω (5x10 <sup>4</sup> at +450°C)
Capacitance (nominal)	
• Pole to pole	: 320 pF for transducer + 200 pF/m of cable
• Pole to casing	: 13 pF for transducer + 300 pF/m of cable

### ENVIRONMENTAL

Temperature range

- *Continuous* : -54°C to +470°C
  - *Extreme* : -70°C to +520°C
- Shock acceleration : < 2000 g peak (half sine 1 ms) along sensitive axis

### Use in explosive atmospheres

EC type examination certificate : LCIE 02 ATEX 6106 X II 2 G (Zones 1, 2)  
Ex ib IIC T6 to T530



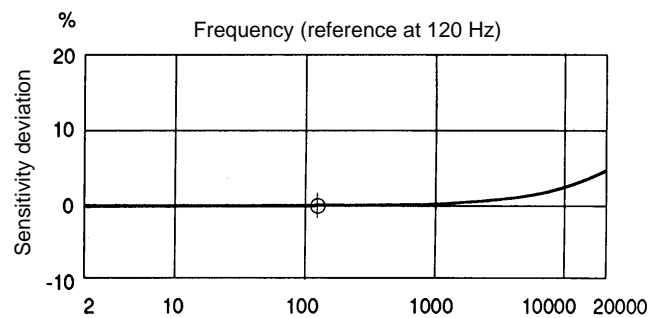
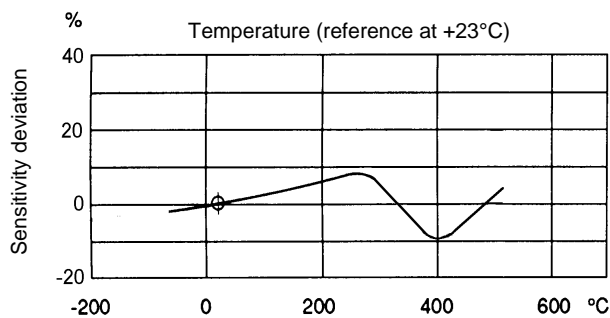
For specific parameters of the mode of protection concerned and special conditions for safe use, please refer to the "EC type examination certificate" that is available from Vibro-Meter SA on demand.

- Corrosion, humidity : Nimonic 90, hermetically welded (Inconel 600 for cable)
- Radiations
- *Gamma flux* :  $10^{10}$  erg/g no effect
  - *Neutron flux* :  $10^{17}$  n/cm<sup>2</sup> no effect
- Mounting : See manual

### CALIBRATION

Dynamic calibration at factory at 1 bar peak and 2 Hz (+23°C). No subsequent calibration necessary.

### TYPICAL RESPONSE CURVES



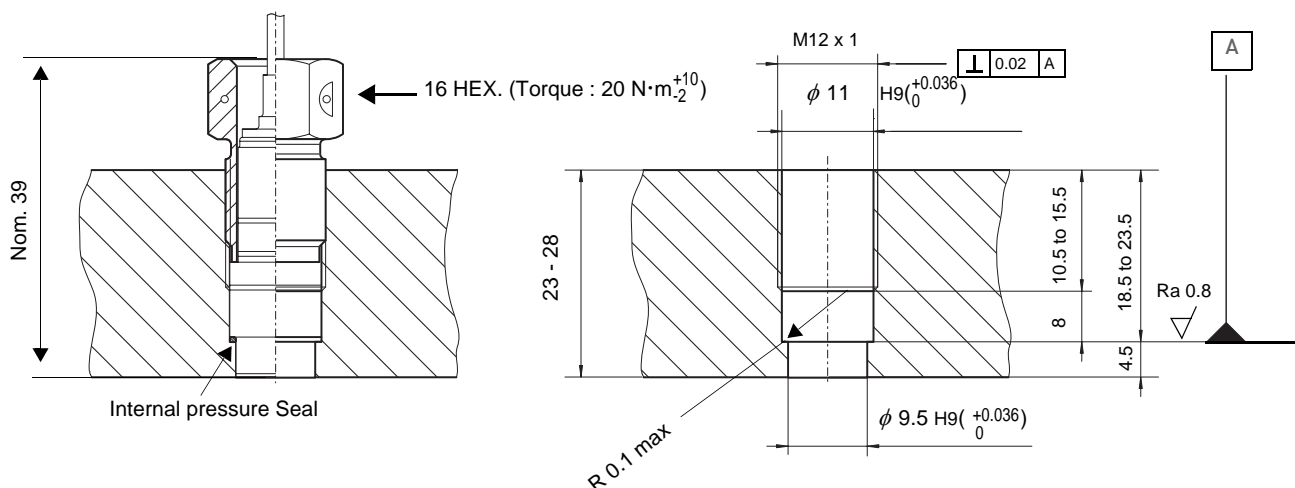
**ORDERING INFORMATION**

To order please specify :

Type	Designation	Ordering Number						
CP 216	Piezoelectric Pressure Transducer with VM Lemo connector	143-216-000-0	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>XX</td></tr> </table>	XX				
XX								
			<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1X</td></tr> <tr><td>2X</td></tr> <tr><td>3X</td></tr> <tr><td>4X</td></tr> <tr><td>5X</td></tr> </table>	1X	2X	3X	4X	5X
1X								
2X								
3X								
4X								
5X								
			<table border="0"> <tr><td>: cable length defined on order</td></tr> <tr><td>: cable length 0.5 m</td></tr> <tr><td>: cable length 1 m</td></tr> <tr><td>: cable length 2 m</td></tr> <tr><td>: cable length 3 m</td></tr> </table>	: cable length defined on order	: cable length 0.5 m	: cable length 1 m	: cable length 2 m	: cable length 3 m
: cable length defined on order								
: cable length 0.5 m								
: cable length 1 m								
: cable length 2 m								
: cable length 3 m								
CP 216	Piezoelectric Pressure Transducer with VM high-temperature connector	143-216-000-1	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>XX</td></tr> </table>	XX				
XX								
			<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1X</td></tr> <tr><td>2X</td></tr> <tr><td>3X</td></tr> <tr><td>4X</td></tr> <tr><td>5X</td></tr> </table>	1X	2X	3X	4X	5X
1X								
2X								
3X								
4X								
5X								
			<table border="0"> <tr><td>: cable length defined on order</td></tr> <tr><td>: cable length 0.5 m</td></tr> <tr><td>: cable length 1 m</td></tr> <tr><td>: cable length 2 m</td></tr> <tr><td>: cable length 3 m</td></tr> </table>	: cable length defined on order	: cable length 0.5 m	: cable length 1 m	: cable length 2 m	: cable length 3 m
: cable length defined on order								
: cable length 0.5 m								
: cable length 1 m								
: cable length 2 m								
: cable length 3 m								

**MOUNTING ACCESSORIES**

**MA 104 Mounting Adapter for CP 216 Version 0XX (for VM Lemo Connector)**

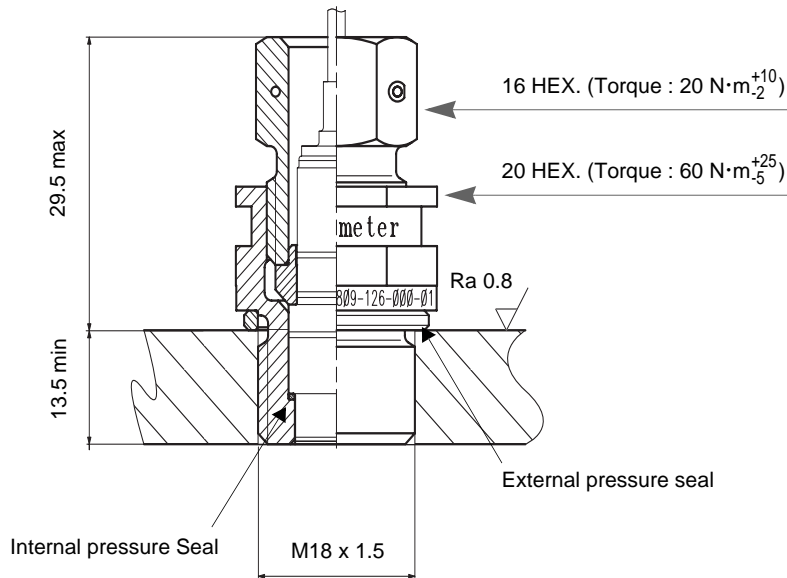


Note: All dimensions in mm

Designation	Ordering Number
MA 104 Mounting adapter	: 809-104-000-011
MA Internal pressure seal	: 143-215-902-011

**MOUNTING ACCESSORIES** (Continued)

**MA 126 Mounting Adapter for CP 216 Version 1XX (for VM High-temperature Connector)**



Note: All dimensions in mm

Designation	Ordering Number
MA 126 Mounting adapter	: 809-126-000-011
MA Internal pressure seal	: 143-215-902-011
MA External pressure seal	: 143-215-903-011



All statements, technical information, drawings, performance rates and descriptions in this document, whilst stated in good faith, are issued for the sole purpose of giving an approximate indication of the products described in them, and are not binding on Vibro-Meter SA unless expressly agreed in writing. Before acquiring this product, you must evaluate it and determine if it is suitable for your intended application. Unless otherwise expressly agreed in writing with Vibro-Meter, you assume all risks and liability associated with its use. Any recommendations and advice given without charge, whilst given in good faith, are not binding on Vibro-Meter.

Vibro-Meter takes no responsibility for any statements related to the product which are not contained in a current Vibro-Meter publication, nor for any statements contained in extracts, summaries, translations or any other documents not authored by Vibro-Meter. We reserve the right to alter any part of this publication without prior notice.

In this publication, a dot (.) is used as the decimal separator and thousands are separated by spaces. Example : 12 345.678 90.

**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](http://www.vibro-meter.com)

**MEGGITT**  
smart engineering for  
extreme environments