

## GP-Series Piezoelectric High-Pressure Transducer – Technical Data



All transducers of the GP Series are front sealing types, having the same outer dimensions with M10x1mm thread and are compatible with existing **NATO** measuring bores. Charge amplifiers and standard cables for piezoelectric transducer measurements can be used.

The industrial grown process of the Gallium Phosphate ( $\text{GaPO}_4$ ) guarantees a stable quality of the piezo material and is important for requirements such as:

- High accuracy
- High reliability
- High sensitivity
- Wide measuring range
- Small Dimension

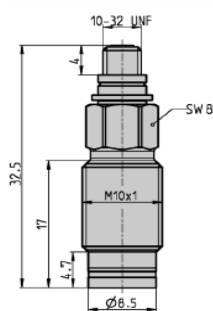
### Typical Applications

For pressure measurements of various applications where very high pressures are expected.

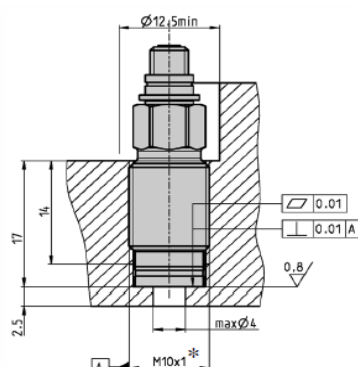
- GP2 for pressure measurements up to 200 MPa.
- GP6 for pressure measurements up to 600 MPa.
- GP8 for pressure measurements up to 800 MPa.

### Features

- Better accuracy by high sensitivity
- Excellent temperature behaviour by use of  $\text{GaPO}_4$
- 800 MPa despite small dimensions
- “GP6” **NATO APPROVED / NSN6685-41-000-7580**



Sensor Dimensions



Bore Dimensions

|  | GP 2                 | GP 6     | GP 8*  |
|--|----------------------|----------|--------|
| Measuring range, Mpa                   | 200                  | 600      | 800    |
| Overload, Mpa                          | 240                  | 640      | 840    |
| Sensitivity (nom.), pC/Mpa             | -55                  | -30      | -25    |
| Linearity, %                           | $\leq \pm 0.5$       |          |        |
| Operating temperature, °C              | °C -50...200         |          |        |
| Temp. Coefficient, %                   | -0.01                |          |        |
| Insulation resistance at 20°C, Ohm     | Ohm $\geq 10^{13}$   |          |        |
| Natural frequency, kHz                 | kHz $\geq 240$       |          |        |
| Rise time, $\mu\text{s}$               | $\mu\text{s} \leq 1$ |          |        |
| Acceleration sensitivity axial, MPa/g  | 0.0002               | < 0.0002 | 0.0002 |
| Acceleration sensitivity radial, MPa/g | 0.0005               | < 0.0005 | 0.0005 |
| Shock resistance axial, g              | 25000                |          |        |
| Shock resistance radial, g             | 10000                |          |        |
| Mounting thread, mm                    | M10 x 1              |          |        |
| Mounting torque, Nm                    | 20                   |          |        |
| Weight, grams                          | 12                   |          |        |
| Cable connector                        | Microdot 10-32UNF    |          |        |

\* GP8 also available with M12x1

### Accessories:

#### Z3321

Sealing Rings (pack of 20 pcs.) for: GP2, GP6

#### Z3323

Diaphragm Protector for GP2, GP6 and GP8

#### Z3322

Sealing Rings for GP8, pack of 20 pcs.

#### Z3206

Installation Tool Kit for GP2, GP6 and GP8 consisting of:

- Torque Wrench
- Socket Wrench SW 8
- Transition Piece 1/4" – 3/8"
- Extension Piece 1/4", 150 mm
- Cable Wrench

#### E178-2.0

Piezo Cable Microdot/BNC, 2.0m length

Official NATO Approval for GP6 High Pressure Transducer  
"M-C-MOPI // Edition B-2017"

NATO/PFP UNCLASSIFIED

6 April 2016

12 - 1

AEP-97Ed.B

**SECTION 12**

**COMBINATION ELECTRONIC PRESSURE, VELOCITY AND ACTION TIME  
(EPVAT) TEST PROCEDURE**

**12.1 Applicability**

5.56 mm, 7.62 mm, 9 mm and 12.7 mm ammunition submitted for Qualification Approval, Production Testing and Surveillance Testing shall be subjected to the Electronic Pressure, Velocity and Action Time (EPVAT) Test Procedure defined in this section.

**12.2 NATO Requirements**

The testing of ammunition for EPVAT at the specified barrel position(s) shall be performed simultaneously using piezo-electric pressure transducers and associated equipment as defined in this section. All requirements are for test ammunition conditioned and fired at the specified temperatures.

**12.2.1 Transducer Type to be Used**

- a. For 5.56 mm, 7.62 mm, 9mm and 12.7 mm, all testing will be conducted using the Kistler Model 6215 Transducer or HPI Model GP6 Transducer.
- b. For 9 mm, designs that were NATO Qualified using the Kistler Model 6203 transducer will continue to be Production Tested using the Kistler Model 6203 transducer. New 9mm designs submitted for Qualification Approval Testing will be tested using either the Kistler Model 6215 transducer or HPI Model GP6 transducer. All 9mm designs that were NATO Qualified with either the Kistler Model 6215 transducer or HPI Model GP6 transducer will subsequently be NATO Production Tested using either the Kistler Model 6215 transducer or HPI Model GP6 transducer.

NATO/PFP UNCLASSIFIED

12 - 1