

PG7000 PISTON-CYLINDER MODULES SUMMARY OF PRESSURE MEASUREMENT SPECIFICATIONS

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DESIGNATOR	UNCERTAINTY ¹ [±]	UNCERTAINTY ¹ WITH AMH [±]	SENSITIVITY ²	TYPICAL DROP RATE @ PRESSURE ³ [mm/min]	REPRODUCEABILITY ⁴ [± ppm]	TYPE A ⁵ [± ppm]
PC-7100/7600-10 (TC)	(0.2 Pa + 12 ppm)	(0.02 Pa + 12 ppm)	(0.01 Pa + 0.5 ppm)	0.2 @ 350 kPa	2	1
PC-7100/7600-10 (CER)	(0.2 Pa + 13 ppm)	(0.02 Pa + 13 ppm)	(0.02 Pa + 0.5 ppm)	0.2 @ 350 kPa	2	2
PC-7100/7600-20	(0.2 Pa + 14 ppm)	(0.03 Pa + 14 ppm)	(0.04 Pa + 0.5 ppm)	0.3 @ 700 kPa	2	2
PC-7100/7600-50	(0.5 Pa + 14 ppm)	(0.1 Pa + 14 ppm)	(0.1 Pa + 0.5 ppm)	0.5 @ 1750 kPa	2	2
PC-7100/7600-100	(1 Pa + 20 ppm)	(0.15 Pa + 20 ppm)	(0.2 Pa + 0.5 ppm)	0.7 @ 3500 kPa	3	2
PC-7100/7600-200	(2 Pa + 20 ppm)	(0.2 Pa + 20 ppm)	(0.4 Pa + 0.5 ppm)	1.0 @ 7000 kPa	3	2
PC-7202-100	(2 Pa + 20 ppm)	(1.5 Pa + 20 ppm)	(2 Pa + 1 ppm)	0.10 @ 5 MPa	2	2
PC-7202-200	(3 Pa + 20 ppm)	(2.5 Pa + 20 ppm)	(4 Pa + 1 ppm)	0.15 @ 10 MPa	3	3
PC-7202-500	[7 Pa + (18 ppm + 0.15 ppm/MPa)]	[6 Pa + (18 ppm + 0.15 ppm/MPa)]	(10 Pa + 1 ppm)	0.20 @ 25 MPa	3	4
PC-7202-1	[15 Pa + (20 ppm + 0.15 ppm/MPa)]	[15 Pa + (20 ppm + 0.15 ppm/MPa)]	(20 Pa + 1 ppm)	0.25 @ 50 MPa	3	5
PC-7202-2	[30 Pa + (30 ppm + 0.15 ppm/MPa)]	[25 Pa + (30 ppm + 0.15 ppm/MPa)]	(40 Pa + 1 ppm)	0.50 @ 100 MPa	4	5
PC-7302-100	(16 Pa + 18 ppm)	(16 Pa + 18 ppm)	(2 Pa + 1 ppm)	0.02 @ 5 MPa	2	3
PC-7302-200	(16 Pa + 20 ppm)	(16 Pa + 20 ppm)	(4 Pa + 1 ppm)	0.04 @ 10 MPa	3	3
PC-7302-500	(20 Pa + 20 ppm)	(18 Pa + 20 ppm)	(10 Pa + 1 ppm)	0.10 @ 25 MPa	3	4
PC-7302-1	(25 Pa + 25 ppm)	(21 Pa + 25 ppm)	(20 Pa + 1 ppm)	0.2 @ 50 MPa	3	5
PC-7302-2	[40 Pa + (25 ppm + 0.04 ppm/MPa)]	[33 Pa + (25 ppm + 0.04 ppm/MPa)]	(40 Pa + 1 ppm)	0.40 @ 100 MPa	4	5
PC-7302-5	[100 Pa + (35 ppm + 0.04 ppm/MPa)]	[66 Pa + (35 ppm + 0.04 ppm/MPa)]	(100 Pa + 1 ppm)	1.0 @ 250 MPa	6	6

¹Typical Pressure Measurement Uncertainty: All relevant sources of uncertainty under typical operating conditions are identified, quantified and combined following the "Guide to the Expression of Uncertainty in Measurement (GUM)". The result is then rounded upwards to provide conservative global figures for the typical user in typical conditions of the maximum deviation of the true value of the pressure determined by the PG7000 and the pressure actually present at the test point. **DHI Technical Note 7920TN01** (latest revision) documents the detailed uncertainty analysis for each platform, piston-cylinder and operating mode, and can be used to derive uncertainty in pressure in a user's specific conditions.

²Sensitivity: The smallest variation in input detectable in output. Since sensitivity is considered a rectangular distribution, it is given as $2a$ per the definition given in the GUM and is not \pm .

³Typical Drop Rate: Typical drop rate at the pressure given.

⁴Reproduceability: The root sum square of the piston-cylinder stability from Technical Note 7920TN01 and using 2×10^{-6} for the stability of masses with a coverage factor of 2.

⁵Type A: Predicted typical type A uncertainty contribution due to the variation of piston position from +2 to -2 mm and rotation from 10 to 50 RPM. Many of these values have been slightly revised from those published in Technical Note 7920TN01C, July 2003, based on the further analysis of empirical data.

All uncertainty specifications given in this technical note are expanded using a coverage factor of 2 and represent a close estimate to 95% confidence. For a complete explanation of all uncertainties please reference the latest revision of **DHI Technical Note 7920TN01**



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