GEONOR

LC 4

CALIBRATION CERTIFICATE

for

Transducer type: Earth Pressure Cell

Serial number: **34792**

$$P = K(f_0^2 - f^2) + A$$

where:

P = Applied load on transducer in BAR

f = output frequency from transducer measured in Hz

f_0 = output frequency from transducer with no load

P	f	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1105.0	-0.3176	0.3176	0.64
5.00	1342.1	4.9312	0.0688	0.14
10.00	1539.9	10.0882	-0.0882	-0.18
15.00	1713.3	15.1914	-0.1914	-0.38
20.00	1868.6	20.2237	-0.2237	-0.45
25.00	2010.7	25.2105	-0.2105	-0.42
30.00	2142.2	30.1508	-0.1508	-0.30
35.00	2265.6	35.0714	-0.0714	-0.14
40.00	2381.7	39.9524	0.0476	0.10
45.00	2492.0	44.8156	0.1844	0.37
50.00	2597.7	49.6824	0.3176	0.64
40.00	2383.5	40.0300	-0.0300	-0.06
30.00	2146.0	30.2983	-0.2983	-0.60
20.00	1874.5	20.4234	-0.4234	-0.85
10.00	1547.2	10.2921	-0.2921	-0.58
0.00	1105.0	-0.3176	0.3176	0.64

K = -0.00000904647 = -9.0465E-06

A =   -0.31762 = -3.1762E-01

f_0 =   1105.0

```
Max nonlinearity error.:  0.85% of full range
Project.................: 144092
Tag no..................: P-100
Units of P..............: BAR
Calibration date........:  6/11 1992
Signature...............: TE
Comment.....: Kalibrert v/temp.: 1 gr. C.
```

LC 2a

CALIBRATION CERTIFICATE

for
Transducer type: Earth Pressure Cell
Serial number: **34892**

$$P = K(f_0{}^2 - f^2) + A$$

where:

P = Applied load on transducer in BAR
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1106.0	-0.3237	0.3237	0.65
5.00	1340.5	4.8954	0.1046	0.21
10.00	1537.6	10.0559	-0.0559	-0.11
15.00	1710.7	15.1710	-0.1710	-0.34
20.00	1865.9	20.2207	-0.2207	-0.44
25.00	2007.7	25.2175	-0.2175	-0.44
30.00	2139.0	30.1705	-0.1705	-0.34
35.00	2261.9	35.0909	-0.0909	-0.18
40.00	2377.8	39.9828	0.0172	0.03
45.00	2487.6	44.8426	0.1574	0.31
50.00	2592.2	49.6763	0.3237	0.65
40.00	2378.5	40.0131	-0.0131	-0.03
30.00	2140.5	30.2289	-0.2289	-0.46
20.00	1868.2	20.2988	-0.2988	-0.60
10.00	1535.9	10.0084	-0.0084	-0.02
0.00	1105.0	-0.3438	0.3438	0.69

K = -0.00000909709 = -9.0971E-06
A = -0.32367 = -3.2367E-01
f_0 = 1106.0

```
Max nonlinearity error.:  0.69% of full range
Project.................: 144092
Tag no..................: P-100
Units of P..............: BAR
Calibration date........: 6/11 1992
Signature...............: TE
Comment.....: Kalibrert v/temp.: 1 gr. C.
```

LC 6

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: **34992**

$$P = K(f_0^2 - f^2) + A$$

where:

P = Applied load on transducer in BAR

f = output frequency from transducer measured in Hz

f_0 = output frequency from transducer with no load

P	f	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1061.5	-0.3248	0.3248	0.65
5.00	1299.8	4.8660	0.1340	0.27
10.00	1499.7	10.0284	-0.0284	-0.06
15.00	1674.7	15.1530	-0.1530	-0.31
20.00	1831.3	20.2178	-0.2178	-0.44
25.00	1974.0	25.2270	-0.2270	-0.45
30.00	2105.8	30.1873	-0.1873	-0.37
35.00	2229.0	35.1138	-0.1138	-0.23
40.00	2344.8	39.9997	0.0003	0.00
45.00	2454.5	44.8564	0.1436	0.29
50.00	2558.7	49.6752	0.3248	0.65
40.00	2345.4	40.0257	-0.0257	-0.05
30.00	2108.2	30.2806	-0.2806	-0.56
20.00	1835.0	20.3429	-0.3429	-0.69
10.00	1504.3	10.1559	-0.1559	-0.31
0.00	1061.0	-0.3345	0.3345	0.67

K = -0.00000922481 = -9.2248E-06
A = -0.32476 = -3.2476E-01
f_0 = 1061.5

```
Max nonlinearity error.:  0.69% of full range
Project................: 144092
Tag no.................: P-100
Units of P.............: BAR
Calibration date.......: 6/11 1992
Signature..............: TE
Comment.....: Kalibrert v/temp.: 1 gr. C.
```

LC 2b

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 36792

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coefficients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	$P_{computed}$	P - $P_{computed}$	% FR
0.00	1178.0	0.0	0.0000	0.0000	0.00
5.00	1330.9	152.9	5.0161	0.0161	0.03
10.00	1463.5	285.5	9.9577	-0.0423	-0.08
15.00	1584.4	406.4	14.9420	-0.0580	-0.12
20.00	1696.3	518.3	19.9622	-0.0378	-0.08
25.00	1800.9	622.9	25.0088	0.0088	0.02
30.00	1899.0	721.0	30.0523	0.0523	0.10
35.00	1991.0	813.0	35.0555	0.0555	0.11
40.00	2078.2	900.2	40.0418	0.0418	0.08
45.00	2161.2	983.2	45.0086	0.0086	0.02
50.00	2240.0	1062.0	49.9232	-0.0768	-0.15
40.00	2083.5	905.5	40.3525	0.3525	0.70
30.00	1905.0	727.0	30.3706	0.3706	0.74
20.00	1702.0	524.0	20.2284	0.2284	0.46
10.00	1466.2	288.2	10.0640	0.0640	0.13
0.00	1178.0	0.0	0.0000	0.0000	0.00

A = 0.03041779663 = 3.04178E-02
B = 0.00001562228 = 1.56223E-05
f_0 = 1178.0

Max nonlinearity error.: 0.74% of full range
Project.................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 1/12 1992
Signature..............: TE
Comment......: Kalibr.v/temp.: 1 gr.C.

LC 1e

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 36892

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f$_0$	P$_{computed}$	P - P$_{computed}$	% FR
0.00	1157.3	0.0	0.0000	0.0000	0.00
5.00	1297.0	139.7	5.0200	0.0200	0.04
10.00	1419.9	262.6	10.0109	0.0109	0.02
15.00	1531.2	373.9	14.9949	-0.0051	-0.01
20.00	1633.8	476.5	19.9801	-0.0199	-0.04
25.00	1730.0	572.7	24.9949	-0.0051	-0.01
30.00	1820.3	663.0	30.0019	0.0019	0.00
35.00	1905.8	748.5	35.0105	0.0105	0.02
40.00	1986.9	829.6	40.0019	0.0019	0.00
45.00	2064.6	907.3	45.0037	0.0037	0.01
50.00	2139.0	981.7	49.9945	-0.0055	-0.01
40.00	1989.1	831.8	40.1405	0.1405	0.28
30.00	1823.4	666.1	30.1790	0.1790	0.36
20.00	1636.3	479.0	20.1063	0.1063	0.21
10.00	1420.2	262.9	10.0238	0.0238	0.05
0.00	1157.5	0.2	0.0067	0.0067	0.01

A = 0.03344655152 = 3.34466E-02
B = 0.00001780579 = 1.78058E-05
f$_0$ = 1157.3

Max nonlinearity error.: 0.36% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 1/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

LC 7a

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 36992

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	P_computed	P - P_computed	% FR
0.00	1115.0	0.0	0.0000	0.0000	0.00
5.00	1251.8	136.8	5.0321	0.0321	0.06
10.00	1372.6	257.6	10.0071	0.0071	0.01
15.00	1483.2	368.2	14.9992	-0.0008	-0.00
20.00	1585.6	470.6	19.9938	-0.0062	-0.01
25.00	1681.5	566.5	24.9961	-0.0039	-0.01
30.00	1772.0	657.0	30.0049	0.0049	0.01
35.00	1857.4	742.4	34.9880	-0.0120	-0.02
40.00	1939.1	824.1	39.9884	-0.0116	-0.02
45.00	2017.5	902.5	45.0013	0.0013	0.00
50.00	2092.8	977.8	50.0136	0.0136	0.03
40.00	1942.0	827.0	40.1701	0.1701	0.34
30.00	1774.2	659.2	30.1301	0.1301	0.26
20.00	1589.0	474.0	20.1657	0.1657	0.33
10.00	1374.7	259.7	10.0980	0.0980	0.20
0.00	1116.0	1.0	0.0345	0.0345	0.07

A =   0.03444747180 =   3.44475E-02
B =   0.00001708080 =   1.70808E-05
f_0 =   1115.0

Max nonlinearity error.: 0.34% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 2/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

GEONOR

LC 12_1

CALIBRATION   CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: **37092**

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer
to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f$_0$	P$_{computed}$	P - P$_{computed}$	% FR
0.00	1150.6	0.0	0.0000	0.0000	0.00
5.00	1277.4	126.8	4.8858	-0.1142	-0.23
10.00	1397.6	247.0	9.9732	-0.0268	-0.05
15.00	1507.0	356.4	14.9890	-0.0110	-0.02
20.00	1609.2	458.6	20.0068	0.0068	0.01
25.00	1705.5	554.9	25.0284	0.0284	0.06
30.00	1796.6	646.0	30.0408	0.0408	0.08
35.00	1882.8	732.2	35.0184	0.0184	0.04
40.00	1965.5	814.9	40.0082	0.0082	0.02
45.00	2044.6	894.0	44.9774	-0.0226	-0.05
50.00	2121.3	970.7	49.9792	-0.0208	-0.04
40.00	1968.0	817.4	40.1624	0.1624	0.32
30.00	1799.4	648.8	30.1989	0.1989	0.40
20.00	1611.8	461.2	20.1386	0.1386	0.28
10.00	1398.8	248.2	10.0262	0.0262	0.05
0.00	1150.5	-0.1	-0.0037	-0.0037	-0.01

A =   0.03658517636 =   3.65852E-02
B =   0.00001535245 =   1.53525E-05
f_0 =   1150.6

```
Max nonlinearity error.:  0.40% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........:  3/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.
```

CALIBRATION CERTIFICATE

for
Transducer type: Earth Pressure Cell
Serial number: 37192

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	$P_{computed}$	P - $P_{computed}$	% FR
0.00	1159.7	0.0	0.0000	0.0000	0.00
5.00	1301.6	141.9	4.9979	-0.0021	-0.00
10.00	1427.0	267.3	9.9958	-0.0042	-0.01
15.00	1540.9	381.2	15.0079	0.0079	0.02
20.00	1645.5	485.8	20.0071	0.0071	0.01
25.00	1742.9	583.2	25.0032	0.0032	0.01
30.00	1834.3	674.6	29.9908	-0.0092	-0.02
35.00	1921.1	761.4	34.9956	-0.0044	-0.01
40.00	2003.6	843.9	39.9946	-0.0054	-0.01
45.00	2082.6	922.9	45.0027	0.0027	0.01
50.00	2158.3	998.6	50.0047	0.0047	0.01
40.00	2005.1	845.4	40.0877	0.0877	0.18
30.00	1834.6	674.9	30.0077	0.0077	0.02
20.00	1644.1	484.4	19.9376	-0.0624	-0.12
10.00	1424.5	264.8	9.8908	-0.1092	-0.22
0.00	1159.5	-0.2	-0.0066	-0.0066	-0.01

A = 0.03276079761 = 3.27608E-02
B = 0.00001733828 = 1.73383E-05
f_0 = 1159.7

Max nonlinearity error.: 0.22% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 4/12 1992
Signature..............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37292

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1134.5	0.0	0.0000	0.0000	0.00
5.00	1260.1	125.6	5.1379	0.1379	0.28
10.00	1369.8	235.3	10.0490	0.0490	0.10
15.00	1472.3	337.8	14.9946	-0.0054	-0.01
20.00	1568.9	434.4	19.9711	-0.0289	-0.06
25.00	1660.1	525.6	24.9505	-0.0495	-0.10
30.00	1747.4	612.9	29.9726	-0.0274	-0.05
35.00	1830.8	696.3	35.0040	0.0040	0.01
40.00	1910.1	775.6	39.9997	-0.0003	-0.00
45.00	1986.5	852.0	45.0079	0.0079	0.02
50.00	2060.2	925.7	50.0206	0.0206	0.04
40.00	1913.2	778.7	40.1992	0.1992	0.40
30.00	1751.1	616.6	30.1910	0.1910	0.38
20.00	1572.6	438.1	20.1678	0.1678	0.34
10.00	1372.0	237.5	10.1515	0.1515	0.30
0.00	1134.5	0.0	0.0000	0.0000	0.00

A = 0.03884617551 = $3.88462E-02$
B = 0.00001640845 = $1.64085E-05$
f_0 = 1134.5

Max nonlinearity error.: 0.40% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 3/12 1992
Signature..............: TE
Comment......: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37392

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer
to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1160.0	0.0	0.0000	0.0000	0.00
5.00	1296.2	136.2	5.0770	0.0770	0.15
10.00	1416.1	256.1	10.0450	0.0450	0.09
15.00	1526.1	366.1	15.0136	0.0136	0.03
20.00	1628.4	468.4	19.9870	-0.0130	-0.03
25.00	1724.7	564.7	24.9793	-0.0207	-0.04
30.00	1815.7	655.7	29.9737	-0.0263	-0.05
35.00	1902.2	742.2	34.9704	-0.0296	-0.06
40.00	1985.0	825.0	39.9811	-0.0189	-0.04
45.00	2064.7	904.7	45.0145	0.0145	0.03
50.00	2141.1	981.1	50.0331	0.0331	0.07
40.00	1986.6	826.6	40.0801	0.0801	0.16
30.00	1816.8	656.8	30.0357	0.0357	0.07
20.00	1629.0	469.0	20.0172	0.0172	0.03
10.00	1415.7	255.7	10.0277	0.0277	0.06
0.00	1160.2	0.2	0.0070	0.0070	0.01

A = 0.03506405699 = 3.50641E-02
B = 0.00001623983 = 1.62398E-05
f_0 = 1160.0

Max nonlinearity error.: 0.16% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 4/12 1992
Signature..............: TE
Comment......: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE

for
Transducer type: Earth Pressure Cell
Serial number: 37492

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1146.0	0.0	0.0000	0.0000	0.00
5.00	1291.5	145.5	4.9904	-0.0096	-0.02
10.00	1420.6	274.6	10.0072	0.0072	0.01
15.00	1537.1	391.1	15.0095	0.0095	0.02
20.00	1644.0	498.0	19.9963	-0.0037	-0.01
25.00	1743.9	597.9	24.9996	-0.0004	-0.00
30.00	1837.6	691.6	29.9937	-0.0063	-0.01
35.00	1926.5	780.5	35.0016	0.0016	0.00
40.00	2011.0	865.0	40.0049	0.0049	0.01
45.00	2091.4	945.4	44.9858	-0.0142	-0.03
50.00	2169.2	1023.2	50.0099	0.0099	0.02
40.00	2013.0	867.0	40.1262	0.1262	0.25
30.00	1839.6	693.6	30.1035	0.1035	0.21
20.00	1645.4	499.4	20.0641	0.0641	0.13
10.00	1419.8	273.8	9.9744	-0.0256	-0.05
0.00	1146.0	0.0	0.0000	0.0000	0.00

A = 0.03188200992 = 3.18820E-02
B = 0.00001660865 = 1.66087E-05
f_0 = 1146.0

Max nonlinearity error.: 0.25% of full range
Project..................: 150592
Tag no...................: P-105
Units of P...............: Bar
Calibration date.........: 7/12 1992
Signature................: TE
Comment......: Kalibr.v/temp.: 1 gr.C.

GEONOR

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37592

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	$P_{computed}$	P - $P_{computed}$	% FR
0.00	1218.0	0.0	0.0000	0.0000	0.00
5.00	1343.5	125.5	5.0446	0.0446	0.09
10.00	1456.6	238.6	10.0043	0.0043	0.01
15.00	1562.1	344.1	14.9842	-0.0158	-0.03
20.00	1661.6	443.6	19.9934	-0.0066	-0.01
25.00	1755.4	537.4	24.9935	-0.0065	-0.01
30.00	1844.6	626.6	29.9986	-0.0014	-0.00
35.00	1929.8	711.8	35.0069	0.0069	0.01
40.00	2011.2	793.2	39.9997	-0.0003	-0.00
45.00	2089.6	871.6	45.0005	0.0005	0.00
50.00	2165.2	947.2	50.0011	0.0011	0.00
40.00	2015.0	797.0	40.2378	0.2378	0.48
30.00	1849.3	631.3	30.2691	0.2691	0.54
20.00	1665.7	447.7	20.2063	0.2063	0.41
10.00	1457.8	239.8	10.0590	0.0590	0.12
0.00	1217.5	-0.5	-0.0191	-0.0191	-0.04

A = 0.03827266515 = 3.82727E-02
B = 0.00001532478 = 1.53248E-05
f_0 = 1218.0

Max nonlinearity error.: 0.54% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 8/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

LC 97_1

CALIBRATION   CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37692

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f − f_0	$P_{computed}$	P − $P_{computed}$	% FR
0.00	1230.0	0.0	0.0000	0.0000	0.00
5.00	1357.1	127.1	5.0372	0.0372	0.07
10.00	1470.7	240.7	10.0350	0.0350	0.07
15.00	1574.9	344.9	15.0306	0.0306	0.06
20.00	1671.6	441.6	20.0188	0.0188	0.04
25.00	1762.0	532.0	24.9886	−0.0114	−0.02
30.00	1847.5	617.5	29.9617	−0.0383	−0.08
35.00	1929.1	699.1	34.9550	−0.0450	−0.09
40.00	2007.4	777.4	39.9734	−0.0266	−0.05
45.00	2082.6	852.6	45.0023	0.0023	0.00
50.00	2155.2	925.2	50.0518	0.0518	0.10
40.00	2008.2	778.2	40.0258	0.0258	0.05
30.00	1848.5	618.5	30.0214	0.0214	0.04
20.00	1671.4	441.4	20.0082	0.0082	0.02
10.00	1470.5	240.5	10.0258	0.0258	0.05
0.00	1230.0	0.0	0.0000	0.0000	0.00

A =   0.03732795492 =   3.73280E-02
B =   0.00001812624 =   1.81262E-05
f_0 =   1230.0

Max nonlinearity error.: 0.10% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 9/12 1992
Signature..............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37792

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f$_0$	P$_{computed}$	P - P$_{computed}$	% FR
0.00	1224.7	0.0	0.0000	0.0000	0.00
5.00	1356.9	132.2	4.9791	-0.0209	-0.04
10.00	1476.5	251.8	9.9861	-0.0139	-0.03
15.00	1586.3	361.6	15.0030	0.0030	0.01
20.00	1687.8	463.1	19.9984	-0.0016	-0.00
25.00	1783.2	558.5	25.0070	0.0070	0.01
30.00	1873.2	648.5	30.0105	0.0105	0.02
35.00	1958.6	733.9	35.0081	0.0081	0.02
40.00	2040.0	815.3	39.9982	-0.0018	-0.00
45.00	2118.1	893.4	44.9938	-0.0062	-0.01
50.00	2193.3	968.6	49.9962	-0.0038	-0.01
40.00	2041.5	816.8	40.0922	0.0922	0.18
30.00	1873.3	648.6	30.0162	0.0162	0.03
20.00	1687.3	462.6	19.9730	-0.0270	-0.05
10.00	1476.1	251.4	9.9685	-0.0315	-0.06
0.00	1224.7	0.0	0.0000	0.0000	0.00

A = 0.03545802327 = 3.54580E-02
B = 0.00001668275 = 1.66828E-05
f_0 = 1224.7

Max nonlinearity error.: 0.18% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 10/12 1992
Signature..............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE

for

Transducer type: Earth Pressure Cell

Serial number: 37892

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1239.0	0.0	0.0000	0.0000	0.00
5.00	1370.3	131.3	5.0084	0.0084	0.02
10.00	1488.2	249.2	10.0072	0.0072	0.01
15.00	1596.3	357.3	15.0076	0.0076	0.02
20.00	1696.5	457.5	19.9989	-0.0011	-0.00
25.00	1790.5	551.5	24.9930	-0.0070	-0.01
30.00	1879.5	640.5	29.9995	-0.0005	-0.00
35.00	1963.8	724.8	34.9911	-0.0089	-0.02
40.00	2044.5	805.5	39.9968	-0.0032	-0.01
45.00	2121.8	882.8	45.0001	0.0001	0.00
50.00	2196.2	957.2	50.0084	0.0084	0.02
40.00	2045.7	806.7	40.0729	0.0729	0.15
30.00	1880.5	641.5	30.0573	0.0573	0.11
20.00	1696.7	457.7	20.0092	0.0092	0.02
10.00	1487.2	248.2	9.9628	-0.0372	-0.07
0.00	1239.0	0.0	0.0000	0.0000	0.00

A = 0.03590285970 = 3.59029E-02
B = 0.00001707230 = 1.70723E-05
f_0 = 1239.0

Max nonlinearity error.: 0.15% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 10/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

GEONOR

LC 7b

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 37992

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer
to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	P_computed	P - P_computed	% FR
0.00	1196.3	0.0	0.0000	0.0000	0.00
5.00	1326.9	130.6	4.9585	-0.0415	-0.08
10.00	1445.8	249.5	9.9562	-0.0438	-0.09
15.00	1555.7	359.4	14.9855	-0.0145	-0.03
20.00	1657.9	461.6	20.0157	0.0157	0.03
25.00	1753.3	557.0	25.0185	0.0185	0.04
30.00	1843.5	647.2	30.0214	0.0214	0.04
35.00	1929.1	732.8	35.0144	0.0144	0.03
40.00	2010.9	814.6	40.0090	0.0090	0.02
45.00	2089.2	892.9	44.9941	-0.0059	-0.01
50.00	2164.5	968.2	49.9768	-0.0232	-0.05
40.00	2013.0	816.7	40.1401	0.1401	0.28
30.00	1845.6	649.3	30.1410	0.1410	0.28
20.00	1658.9	462.6	20.0666	0.0666	0.13
10.00	1446.3	250.0	9.9782	-0.0218	-0.04
0.00	1196.0	-0.3	-0.0108	-0.0108	-0.02

A =   0.03583835982 =   3.58384E-02
B =   0.00001629819 =   1.62982E-05
f_0 =   1196.3

Max nonlinearity error.: 0.28% of full range
Project.................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 11/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

GEONOR A/S
P.O.Box 99 Røa, 0701 Oslo 7, Norway
Office: Grinidammen 10, 1343 Eiksmarka
Telephone: 02-24 75 50
Telex: 77306 genor n
Telefax: 02-24 58 46
Bank account: 6233.05.06259
Postal account: 0808 5134176

CALIBRATION CERTIFICATE

for
Transducer type: Earth Pressure Cell
Serial number: 38092

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer
to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	f - f_0	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1176.0	0.0	0.0000	0.0000	0.00
5.00	1305.2	129.2	4.9414	-0.0586	-0.12
10.00	1423.3	247.3	9.9376	-0.0624	-0.12
15.00	1533.0	357.0	14.9886	-0.0114	-0.02
20.00	1634.5	458.5	20.0138	0.0138	0.03
25.00	1729.6	553.6	25.0290	0.0290	0.06
30.00	1819.3	643.3	30.0314	0.0314	0.06
35.00	1904.3	728.3	35.0155	0.0155	0.03
40.00	1985.7	809.7	40.0107	0.0107	0.02
45.00	2063.6	887.6	44.9948	-0.0052	-0.01
50.00	2138.4	962.4	49.9680	-0.0320	-0.06
40.00	1989.6	813.6	40.2555	0.2555	0.51
30.00	1824.2	648.2	30.3123	0.3123	0.62
20.00	1639.0	463.0	20.2444	0.2444	0.49
10.00	1425.8	249.8	10.0483	0.0483	0.10
0.00	1176.0	0.0	0.0000	0.0000	0.00

A = 0.03612602035 = 3.61260E-02
B = 0.00001641125 = 1.64113E-05
f_0 = 1176.0

Max nonlinearity error.: 0.62% of full range
Project..................: 150592
Tag no...................: P-105
Units of P...............: Bar
Calibration date.........: 11/12 1992
Signature................: TE
Comment......: Kalibr.v/temp.: 1 gr.C.

GEONOR

CALIBRATION   CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 38192

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer
to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1141.2	0.0	0.0000	0.0000	0.00
5.00	1277.4	136.2	5.0415	0.0415	0.08
10.00	1398.5	257.3	10.0234	0.0234	0.05
15.00	1509.9	368.7	15.0213	0.0213	0.04
20.00	1613.1	471.9	20.0062	0.0062	0.01
25.00	1709.8	568.6	24.9869	-0.0131	-0.03
30.00	1801.4	660.2	29.9813	-0.0187	-0.04
35.00	1888.4	747.2	34.9738	-0.0262	-0.05
40.00	1971.6	830.4	39.9753	-0.0247	-0.05
45.00	2051.6	910.4	44.9935	-0.0065	-0.01
50.00	2129.0	987.8	50.0439	0.0439	0.09
40.00	1973.8	832.6	40.1105	0.1105	0.22
30.00	1803.9	662.7	30.1213	0.1213	0.24
20.00	1614.6	473.4	20.0812	0.0812	0.16
10.00	1398.5	257.3	10.0234	0.0234	0.05
0.00	1141.2	0.0	0.0000	0.0000	0.00

A = 0.03483300318 = 3.48330E-02
B = 0.00001602451 = 1.60245E-05
f_0 = 1141.2

Max nonlinearity error.: 0.24% of full range
Project...................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 14/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

GEONOR

LC 97_2

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: **38292**

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1191.8	0.0	0.0000	0.0000	0.00
5.00	1325.0	133.2	4.9976	-0.0024	-0.00
10.00	1444.2	252.4	9.9779	-0.0221	-0.04
15.00	1553.8	362.0	14.9804	-0.0196	-0.04
20.00	1655.7	463.9	19.9952	-0.0048	-0.01
25.00	1751.1	559.3	25.0080	0.0080	0.02
30.00	1841.1	649.3	30.0187	0.0187	0.04
35.00	1926.3	734.5	35.0142	0.0142	0.03
40.00	2007.6	815.8	40.0095	0.0095	0.02
45.00	2085.5	893.7	45.0053	0.0053	0.01
50.00	2160.0	968.2	49.9748	-0.0252	-0.05
40.00	2008.0	816.2	40.0347	0.0347	0.07
30.00	1840.9	649.1	30.0073	0.0073	0.01
20.00	1654.7	462.9	19.9443	-0.0557	-0.11
10.00	1442.6	250.8	9.9078	-0.0922	-0.18
0.00	1191.7	-0.1	-0.0035	-0.0035	-0.01

A = 0.03527084300 = 3.52708E-02
B = 0.00001688219 = 1.68822E-05
f_0 = 1191.8

Max nonlinearity error.: 0.18% of full range
Project................: 150592
Tag no.................: P-105
Units of P.............: Bar
Calibration date.......: 15/12 1992
Signature..............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.

CALIBRATION CERTIFICATE
for
Transducer type: Earth Pressure Cell
Serial number: 38392

Least square fit of curved line through datasets achieved by recording the changing frequency output from the transducer to find coeffisients A and B in the equation:

$$P = A(f - f_0) + B(f - f_0)^2$$

where:

P = Applied load on transducer in Bar
f = output frequency from transducer measured in Hz
f_0 = output frequency from transducer with no load

P	f	$f - f_0$	$P_{computed}$	$P - P_{computed}$	% FR
0.00	1230.6	0.0	0.0000	0.0000	0.00
5.00	1352.8	122.2	4.9622	-0.0378	-0.08
10.00	1466.3	235.7	9.9667	-0.0333	-0.07
15.00	1572.0	341.4	14.9698	-0.0302	-0.06
20.00	1672.0	441.4	20.0073	0.0073	0.01
25.00	1766.1	535.5	25.0177	0.0177	0.04
30.00	1855.7	625.1	30.0318	0.0318	0.06
35.00	1941.0	710.4	35.0259	0.0259	0.05
40.00	2022.5	791.9	39.9985	-0.0015	-0.00
45.00	2101.3	870.7	44.9932	-0.0068	-0.01
50.00	2177.2	946.6	49.9777	-0.0223	-0.04
40.00	2026.0	795.4	40.2165	0.2165	0.43
30.00	1859.5	628.9	30.2497	0.2497	0.50
20.00	1676.2	445.6	20.2254	0.2254	0.45
10.00	1468.3	237.7	10.0583	0.0583	0.12
0.00	1230.6	0.0	0.0000	0.0000	0.00

A = 0.03880020868 = 3.88002E-02
B = 0.00001478643 = 1.47864E-05
f_0 = 1230.6

Max nonlinearity error.: 0.50% of full range
Project..................: 150592
Tag no..................: P-105
Units of P..............: Bar
Calibration date........: 14/12 1992
Signature...............: TE
Comment.....: Kalibr.v/temp.: 1 gr.C.