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Manometric feature of quartz resonators is the reproducibility of temperature-frequency characteristic (PMx), which must be compensated with high accuracy over a wide temperature range and in the range of operating pressures. You must take into account the change in the temperature sensitivity of the cavity of the pressure acting on it. The following describes two methods of temperature compensation.

Algorithm 1

The best way - is the calculation of pressure on the regression function of two factors: the temperature and pressure. Below are two functions of degree and communication factors are sufficient for the calculation of pressure with the required accuracy.
Recommended for inverters with a permissible additional error over the full operating temperature range from 0.03% to 0.15%.
Regression function is represented by a polynomial of the form

$$P=A_0+A_1 \quad (F$$

or

$$P= A_0+A_1 \quad (F$$

Where
F (t)-frequency channel with temperature;
F (t0)-constant component temperature channel;
F (p)-frequency channel with pressure;
F (p0)-constant component of the channel pressure;
A0 ... A8 are the coefficients of the regression function

Example calibration protocol converter.

				F(t0)=401	F(p0)=1249	
Рэксперементальное, мм рт. ст.	Ррасчетное, мм рт. ст.	Ррасч.-Рэксп., мм рт. ст.	(Ррасч.-Рэксп.)/Pmax, %	F(t)-F(t0),Гц	F(p)-F(p0),Гц	T, град С
601,35	601,2753	-0,0747	-0,0091	0,936293	0,0866667	-29,134
620,8	620,7280	-0,0720	-0,0088	0,947813	48,666667	-29,107
640,5	640,4239	-0,0761	-0,0093	0,95713	97,818667	-29,097
660,7	660,6104	-0,0896	-0,0109	0,95035	148,158	-29,115
680,7	680,6533	-0,0467	-0,0057	0,94794	198,10267	-29,118
700,5	700,4245	-0,0755	-0,0092	0,91799	247,33333	-29,148
720,5	720,4409	-0,0591	-0,0072	0,902607	297,13933	-29,158
740,3	740,2055	-0,0945	-0,0115	0,901683	346,28367	-29,143
760,3	760,2222	-0,0778	-0,0095	0,913727	396,01967	-29,129
780,55	780,5431	-0,0069	-0,0008	0,904483	446,47367	-29,148
800,4	800,3539	-0,0461	-0,0056	0,883123	495,62467	-29,156
820,4	820,3274	-0,0726	-0,0088	0,86967	545,14433	-29,161
602,2	602,3205	0,1205	0,0147	35,31873	3,9716667	-9,262
621,15	621,2835	0,1335	0,0163	35,30153	51,407	-9,294
640,9	640,9950	0,0950	0,0116	35,28682	100,68	-9,291
661	661,1050	0,1050	0,0128	35,30015	150,91367	-9,271
680,7	680,7854	0,0854	0,0104	35,30344	200,038	-9,275
700,45	700,5285	0,0785	0,0096	35,35116	249,286	-9,229
720,45	720,5514	0,1014	0,0124	35,35127	299,19333	-9,247
740,85	740,9747	0,1247	0,0152	35,30927	350,05833	-9,283
760,45	760,5902	0,1402	0,0171	35,31088	398,87833	-9,264
780,4	780,5219	0,1219	0,0149	35,33774	448,45167	-9,236
800,2	800,2991	0,0991	0,0121	35,35847	497,605	-9,235
820,4	820,4798	0,0798	0,0097	35,35954	547,72367	-9,238
601,6	601,7050	0,1050	0,0128	71,01617	4,3203333	10,416
620,6	620,5892	-0,0108	-0,0013	71,02194	51,644667	10,420
640,85	640,9039	0,0539	0,0066	71,02627	102,51667	10,420
661,35	661,3957	0,0457	0,0056	71,01252	153,79267	10,402
680,45	680,4510	0,0010	0,0001	70,98557	201,43867	10,390
700,9	700,8933	-0,0067	-0,0008	71,01586	252,51967	10,422
720,85	720,8977	0,0477	0,0058	71,0077	302,467	10,410
740,45	740,5229	0,0729	0,0089	71,01393	351,433	10,419
760,75	760,8308	0,0808	0,0098	71,01017	402,06467	10,409
780,65	780,6892	0,0392	0,0048	70,98865	451,538	10,396
800,85	800,8997	0,0497	0,0061	71,01969	501,85633	10,427
820,7	820,7059	0,0059	0,0007	71,00771	551,12867	10,409
602	601,9291	-0,0709	-0,0086	108,5512	7,498	30,250
621	620,8472	-0,1528	-0,0186	108,8712	55,02	30,525
640,75	640,6184	-0,1316	-0,0160	109,0794	104,64067	30,570
660,75	660,6393	-0,1107	-0,0135	109,0045	154,82767	30,435
680,5	680,4191	-0,0809	-0,0099	108,9908	204,37167	30,370
700,7	700,5466	-0,1544	-0,0188	108,8328	254,74867	30,336
720,5	720,4366	-0,0634	-0,0077	108,789	304,50233	30,325
740,5	740,3924	-0,1076	-0,0131	108,7743	354,384	30,328
760,45	760,3228	-0,1272	-0,0155	108,7742	404,167	30,339
780,55	780,4067	-0,1433	-0,0175	108,7887	454,29833	30,353
800,2	800,0434	-0,1566	-0,0191	108,8147	503,27933	30,372
820,4	820,2489	-0,1511	-0,0184	108,8467	553,643	30,393
601,55	601,5993	0,0493	0,0060	166,6303	11,992667	59,403
621	621,0715	0,0715	0,0087	166,6284	61,019667	59,398
640,15	640,1166	-0,0334	-0,0041	166,6332	108,93767	59,402
660,1	660,0950	-0,0050	-0,0006	166,638	159,16767	59,404
700,55	700,6276	0,0776	0,0095	166,6402	260,96033	59,405
720,7	720,7563	0,0563	0,0069	166,6338	311,45333	59,398
740,6	740,6620	0,0620	0,0076	166,6316	361,351	59,399
760,65	760,7108	0,0608	0,0074	166,6392	411,57133	59,404

Значения коэффициентов полинома

A0= 601,251440 3
A1= -0,011490103
A2= -8,998885E-05
A3= 0,40030533
A4= 2,93202E-06
A5= -2,0091E-05