

## Application Note AN-013

### GX16C

### Pickup Voltage, Dropout Voltage, and Coil Current vs. Temperature

Since Gigavac contactors are operated by a coil that changes resistance with temperature, Pickup Voltage and Drop Out Voltage will decrease at temperatures below 25C and increase at temperatures above 25C. Coil current will be higher at lower temperatures and lower at higher temperatures. Figures 1 through 4 show the Pickup and Dropout Voltages and Inrush and Coil Currents over the temperature range while Table 1 presents the data numerically.

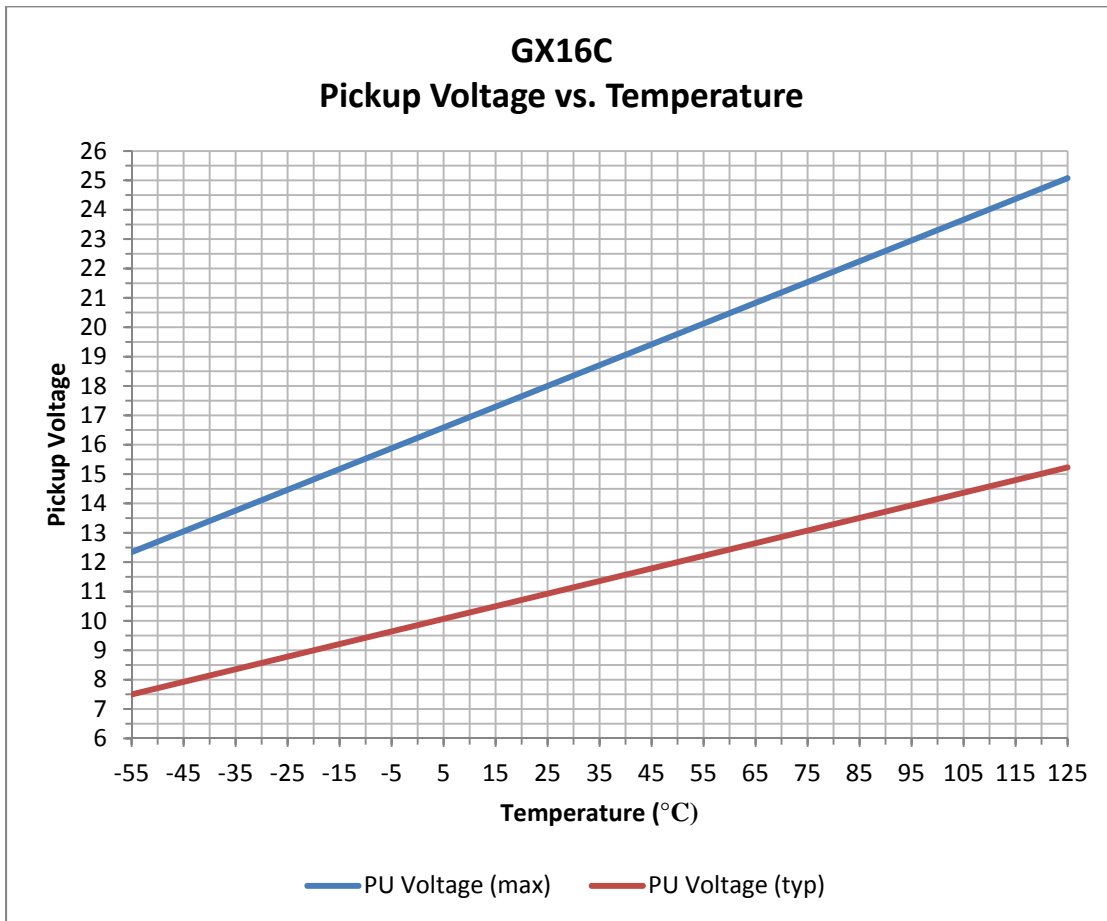


Figure 1.

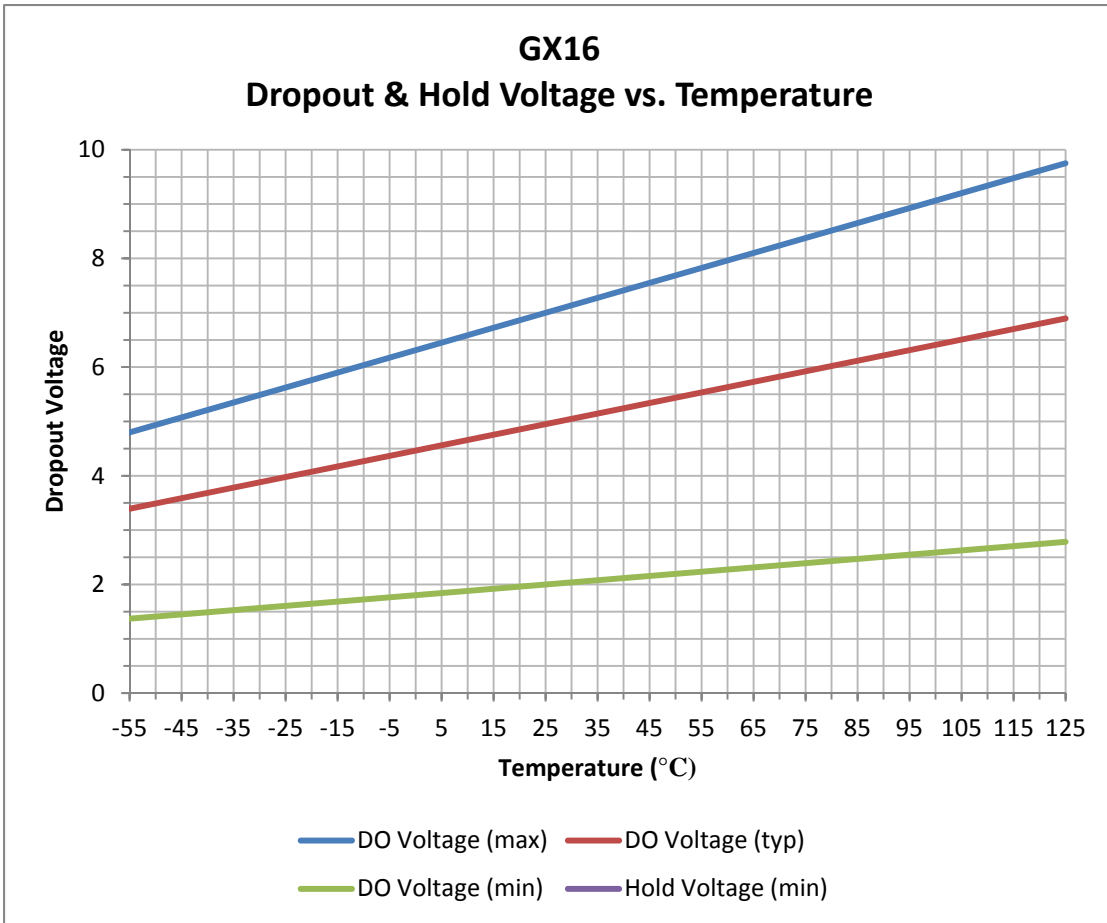


Figure 2.

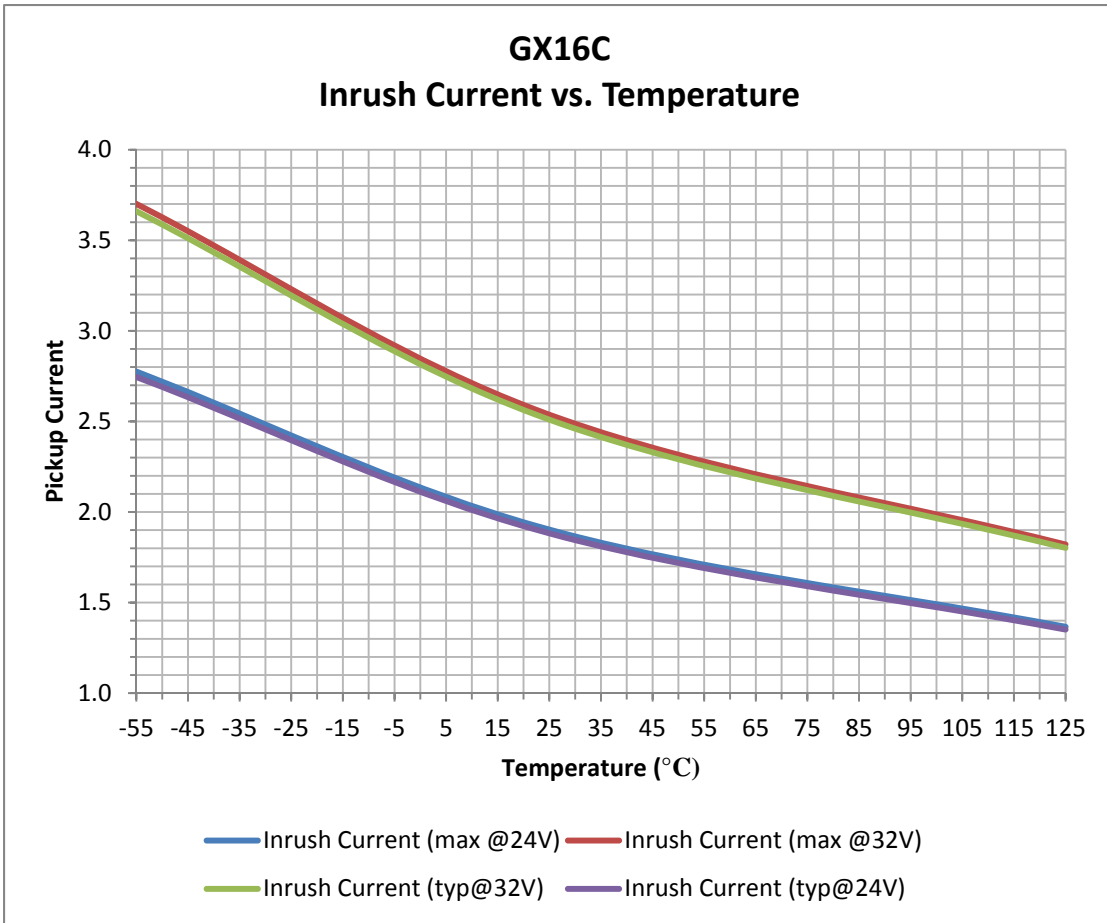


Figure 3.

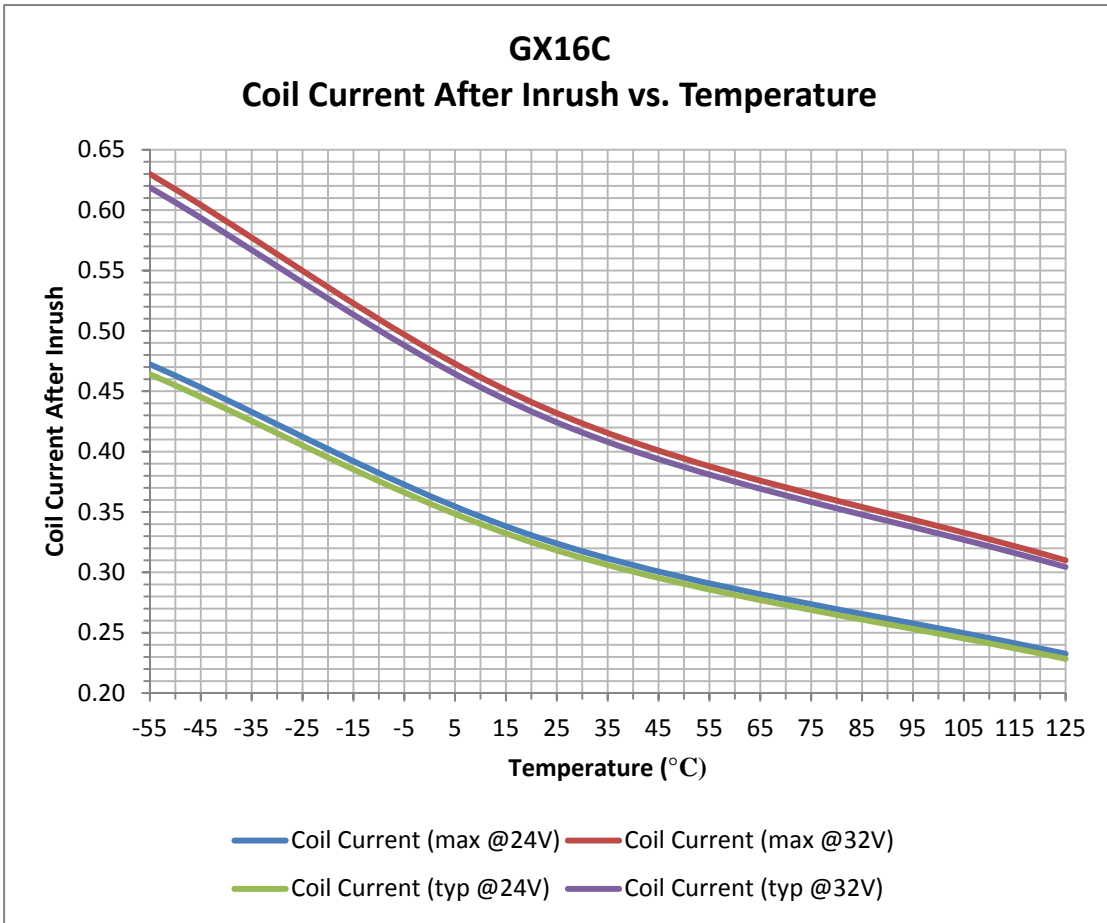


Figure 4.

Table 1

GX16C													
Temp. °C	Pick up		Drop out			Inrush Current				Coil Current			
	Voltage		Voltage			@ 12Vdc		@16 Vdc		@ 12Vdc		@16 Vdc	
	Typ	Max	Min	Typ	Max	Max	Typ	Max	Typ	Max	Typ	Max	Typ
-55	7.49	12.34	1.37	3.39	4.80	2.78	2.75	3.70	3.66	0.472	0.464	0.630	0.619
-50	7.71	12.69	1.41	3.49	4.94	2.70	2.67	3.60	3.56	0.459	0.451	0.612	0.602
-45	7.92	13.05	1.45	3.59	5.07	2.62	2.60	3.50	3.46	0.447	0.439	0.596	0.585
-40	8.14	13.40	1.49	3.69	5.21	2.56	2.53	3.41	3.37	0.435	0.427	0.580	0.570
-35	8.35	13.76	1.53	3.78	5.35	2.49	2.46	3.32	3.28	0.424	0.416	0.565	0.555
-30	8.57	14.11	1.57	3.88	5.49	2.43	2.40	3.24	3.20	0.413	0.406	0.551	0.541
-25	8.78	14.46	1.61	3.98	5.62	2.37	2.34	3.16	3.12	0.403	0.396	0.537	0.528
-20	9.00	14.82	1.65	4.07	5.76	2.31	2.29	3.08	3.05	0.393	0.387	0.525	0.515
-15	9.21	15.17	1.69	4.17	5.90	2.26	2.23	3.01	2.98	0.384	0.378	0.512	0.503
-10	9.43	15.52	1.72	4.27	6.04	2.21	2.18	2.94	2.91	0.376	0.369	0.501	0.492
-5	9.64	15.88	1.76	4.37	6.17	2.16	2.13	2.88	2.84	0.367	0.361	0.490	0.481
0	9.86	16.23	1.80	4.46	6.31	2.11	2.09	2.81	2.78	0.359	0.353	0.479	0.470
5	10.07	16.59	1.84	4.56	6.45	2.07	2.04	2.75	2.72	0.352	0.345	0.469	0.460
10	10.29	16.94	1.88	4.66	6.59	2.02	2.00	2.70	2.67	0.344	0.338	0.459	0.451
15	10.50	17.29	1.92	4.76	6.72	1.98	1.96	2.64	2.61	0.337	0.331	0.450	0.442
20	10.72	17.65	1.96	4.85	6.86	1.94	1.92	2.59	2.56	0.330	0.325	0.441	0.433
25	10.93	18.00	2.00	4.95	7.00	1.90	1.88	2.54	2.51	0.324	0.318	0.432	0.424
30	11.14	18.35	2.04	5.05	7.14	1.87	1.85	2.49	2.46	0.318	0.312	0.424	0.416
35	11.36	18.71	2.08	5.14	7.28	1.83	1.81	2.44	2.41	0.312	0.306	0.416	0.408
40	11.57	19.06	2.12	5.24	7.41	1.80	1.78	2.40	2.37	0.306	0.300	0.408	0.401
45	11.79	19.41	2.16	5.34	7.55	1.76	1.74	2.35	2.33	0.300	0.295	0.400	0.393
50	12.00	19.77	2.20	5.44	7.69	1.73	1.71	2.31	2.28	0.295	0.290	0.393	0.386
55	12.22	20.12	2.24	5.53	7.83	1.70	1.68	2.27	2.24	0.290	0.285	0.386	0.379
60	12.43	20.48	2.28	5.63	7.96	1.67	1.65	2.23	2.21	0.285	0.280	0.380	0.373
65	12.65	20.83	2.31	5.73	8.10	1.64	1.63	2.19	2.17	0.280	0.275	0.373	0.367
70	12.86	21.18	2.35	5.83	8.24	1.62	1.60	2.16	2.13	0.275	0.270	0.367	0.360
75	13.08	21.54	2.39	5.92	8.38	1.59	1.57	2.12	2.10	0.271	0.266	0.361	0.355
80	13.29	21.89	2.43	6.02	8.51	1.56	1.55	2.09	2.06	0.266	0.262	0.355	0.349
85	13.51	22.24	2.47	6.12	8.65	1.54	1.52	2.05	2.03	0.262	0.257	0.349	0.343
90	13.72	22.60	2.51	6.21	8.79	1.52	1.50	2.02	2.00	0.258	0.253	0.344	0.338
95	13.94	22.95	2.55	6.31	8.93	1.49	1.48	1.99	1.97	0.254	0.250	0.339	0.333
100	14.15	23.31	2.59	6.41	9.06	1.47	1.45	1.96	1.94	0.250	0.246	0.334	0.328
105	14.37	23.66	2.63	6.51	9.20	1.45	1.43	1.93	1.91	0.246	0.242	0.329	0.323
110	14.58	24.01	2.67	6.60	9.34	1.43	1.41	1.90	1.88	0.243	0.239	0.324	0.318
115	14.80	24.37	2.71	6.70	9.48	1.41	1.39	1.87	1.85	0.239	0.235	0.319	0.313
120	15.01	24.72	2.75	6.80	9.61	1.39	1.37	1.85	1.83	0.236	0.232	0.314	0.309
125	15.23	25.07	2.79	6.90	9.75	1.37	1.35	1.82	1.80	0.233	0.228	0.310	0.305

If you have any questions you can always call us at 805-684-8401.