

## Application Note AN-012

### GX16B

### 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.

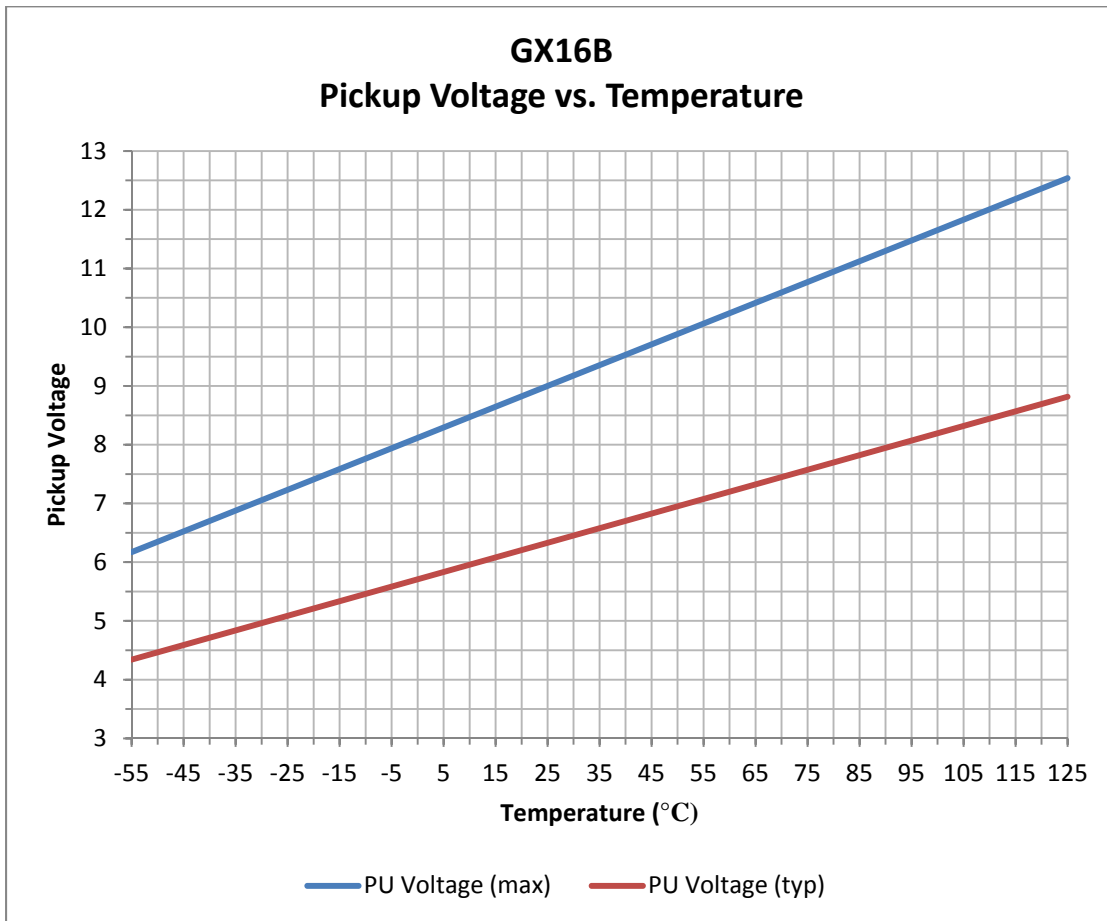


Figure 1.

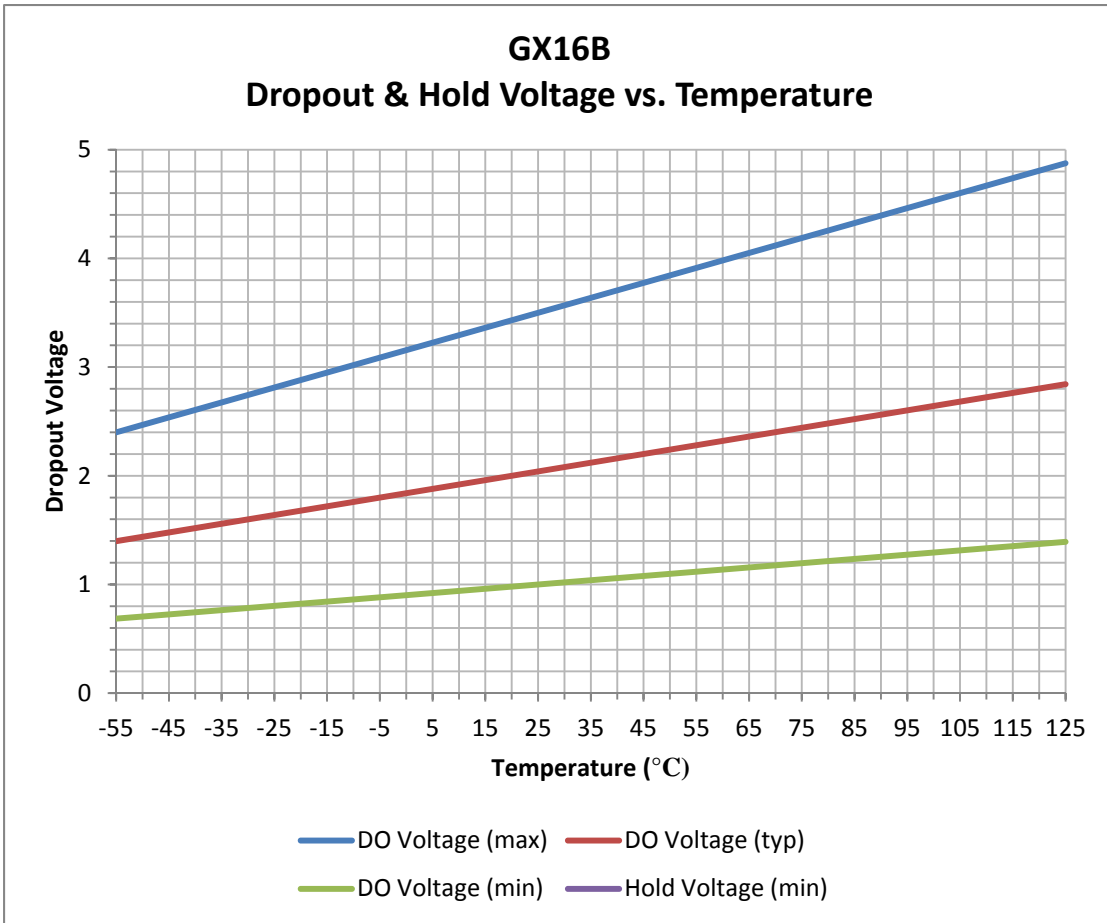


Figure 2.

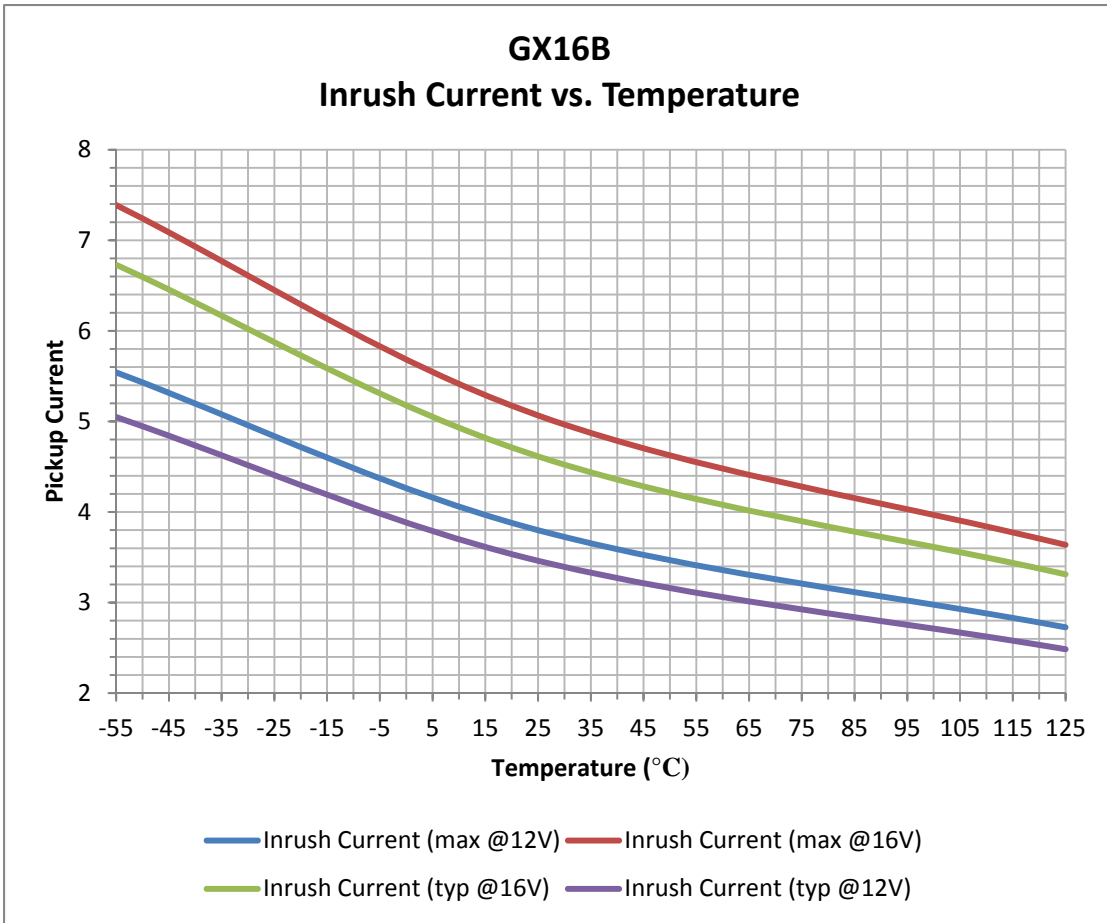


Figure 3.

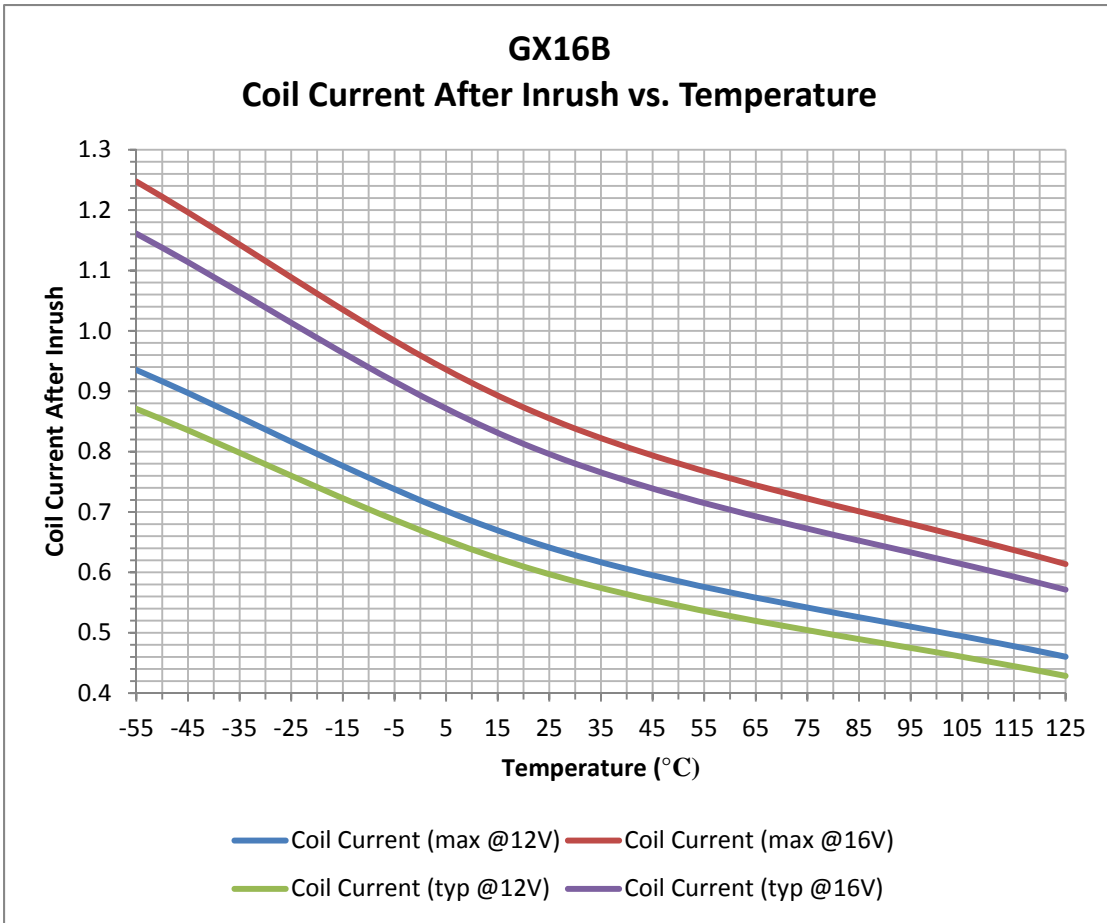


Figure 4.

Table 1

Temp. °C	GX16B												
	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	4.34	6.17	0.69	1.40	2.40	5.54	5.05	7.39	6.73	0.935	0.871	1.247	1.161
-50	4.46	6.35	0.71	1.44	2.47	5.39	4.91	7.18	6.54	0.909	0.847	1.212	1.129
-45	4.59	6.52	0.72	1.48	2.54	5.24	4.77	6.99	6.37	0.885	0.824	1.179	1.098
-40	4.71	6.70	0.74	1.52	2.61	5.10	4.65	6.80	6.20	0.861	0.802	1.148	1.069
-35	4.84	6.88	0.76	1.56	2.67	4.97	4.53	6.63	6.04	0.839	0.781	1.119	1.042
-30	4.96	7.05	0.78	1.60	2.74	4.85	4.42	6.46	5.89	0.818	0.762	1.091	1.016
-25	5.09	7.23	0.80	1.64	2.81	4.73	4.31	6.30	5.74	0.798	0.743	1.064	0.991
-20	5.21	7.41	0.82	1.68	2.88	4.62	4.20	6.15	5.61	0.779	0.725	1.039	0.967
-15	5.33	7.59	0.84	1.72	2.95	4.51	4.11	6.01	5.48	0.761	0.708	1.014	0.944
-10	5.46	7.76	0.86	1.76	3.02	4.40	4.01	5.87	5.35	0.743	0.692	0.991	0.923
-5	5.58	7.94	0.88	1.80	3.09	4.31	3.92	5.74	5.23	0.727	0.677	0.969	0.902
0	5.71	8.12	0.90	1.84	3.16	4.21	3.84	5.62	5.12	0.711	0.662	0.948	0.883
5	5.83	8.29	0.92	1.88	3.22	4.12	3.76	5.50	5.01	0.696	0.648	0.928	0.864
10	5.96	8.47	0.94	1.92	3.29	4.04	3.68	5.38	4.90	0.681	0.634	0.908	0.846
15	6.08	8.65	0.96	1.96	3.36	3.95	3.60	5.27	4.80	0.667	0.621	0.890	0.829
20	6.21	8.82	0.98	2.00	3.43	3.88	3.53	5.17	4.71	0.654	0.609	0.872	0.812
25	6.33	9.00	1.00	2.04	3.50	3.80	3.46	5.07	4.61	0.641	0.597	0.855	0.796
30	6.45	9.18	1.02	2.08	3.57	3.73	3.39	4.97	4.53	0.629	0.586	0.838	0.781
35	6.58	9.35	1.04	2.12	3.64	3.66	3.33	4.87	4.44	0.617	0.574	0.823	0.766
40	6.70	9.53	1.06	2.16	3.71	3.59	3.27	4.78	4.36	0.606	0.564	0.807	0.752
45	6.83	9.71	1.08	2.20	3.78	3.52	3.21	4.70	4.28	0.594	0.554	0.793	0.738
50	6.95	9.88	1.10	2.24	3.84	3.46	3.15	4.61	4.20	0.584	0.544	0.778	0.725
55	7.08	10.06	1.12	2.28	3.91	3.40	3.10	4.53	4.13	0.574	0.534	0.765	0.712
60	7.20	10.24	1.14	2.32	3.98	3.34	3.04	4.45	4.06	0.564	0.525	0.752	0.700
65	7.33	10.41	1.16	2.36	4.05	3.28	2.99	4.38	3.99	0.554	0.516	0.739	0.688
70	7.45	10.59	1.18	2.40	4.12	3.23	2.94	4.30	3.92	0.545	0.507	0.726	0.676
75	7.57	10.77	1.20	2.44	4.19	3.18	2.89	4.23	3.86	0.536	0.499	0.715	0.665
80	7.70	10.95	1.22	2.48	4.26	3.12	2.85	4.17	3.79	0.527	0.491	0.703	0.655
85	7.82	11.12	1.24	2.52	4.33	3.07	2.80	4.10	3.73	0.519	0.483	0.692	0.644
90	7.95	11.30	1.26	2.56	4.39	3.03	2.76	4.03	3.68	0.511	0.476	0.681	0.634
95	8.07	11.48	1.28	2.60	4.46	2.98	2.71	3.97	3.62	0.503	0.468	0.670	0.624
100	8.20	11.65	1.29	2.64	4.53	2.93	2.67	3.91	3.56	0.495	0.461	0.660	0.615
105	8.32	11.83	1.31	2.68	4.60	2.89	2.63	3.85	3.51	0.488	0.454	0.650	0.606
110	8.44	12.01	1.33	2.72	4.67	2.85	2.59	3.80	3.46	0.481	0.448	0.641	0.597
115	8.57	12.18	1.35	2.76	4.74	2.81	2.56	3.74	3.41	0.474	0.441	0.632	0.588
120	8.69	12.36	1.37	2.80	4.81	2.77	2.52	3.69	3.36	0.467	0.435	0.623	0.580
125	8.82	12.54	1.39	2.84	4.88	2.73	2.48	3.64	3.31	0.460	0.429	0.614	0.571

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