

Application Note AN-030

HX460B

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

Since Gigavac contactors are operated by a coil that changes resistance with temperature, Pick-up 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 3 shows the Pickup and Dropout Voltages and Coil Currents over the temperature range while Table 1 presents the data numerically.

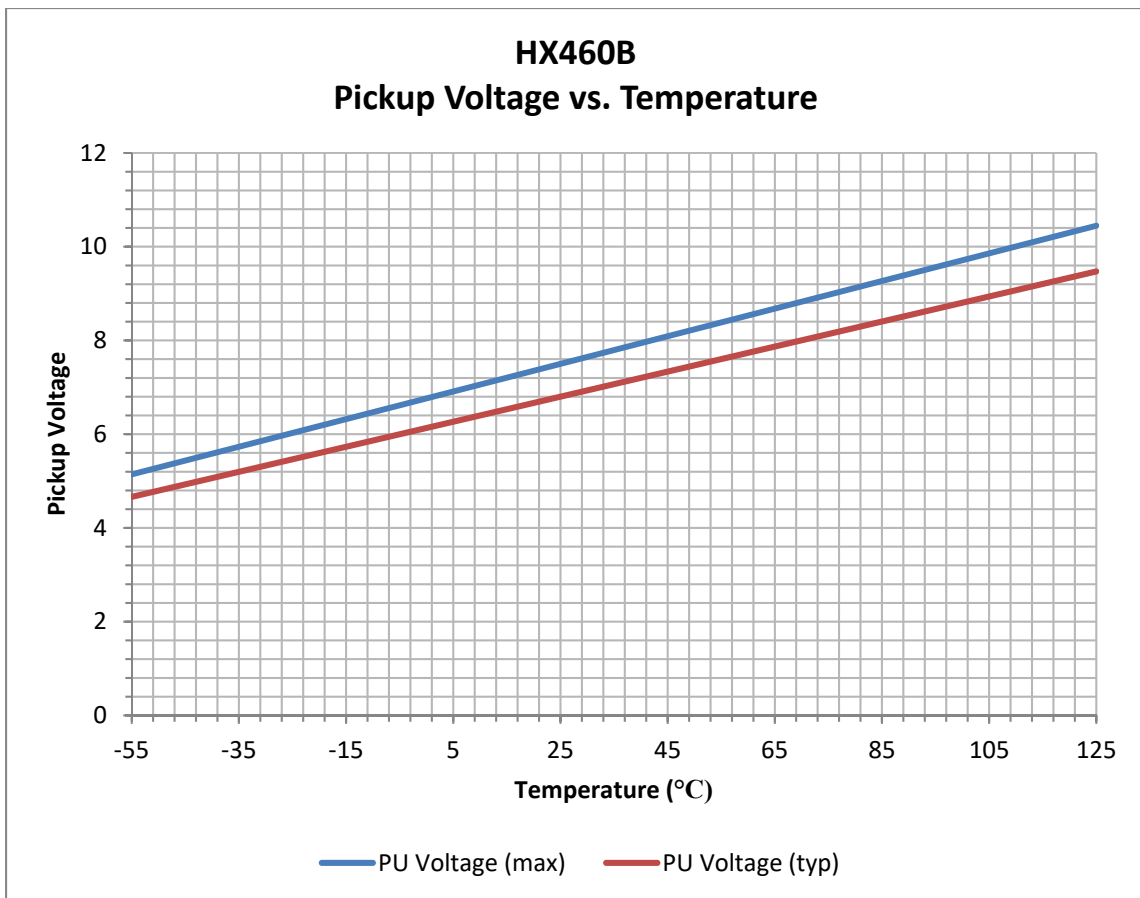


Figure 1.

APPLICATION NOTE

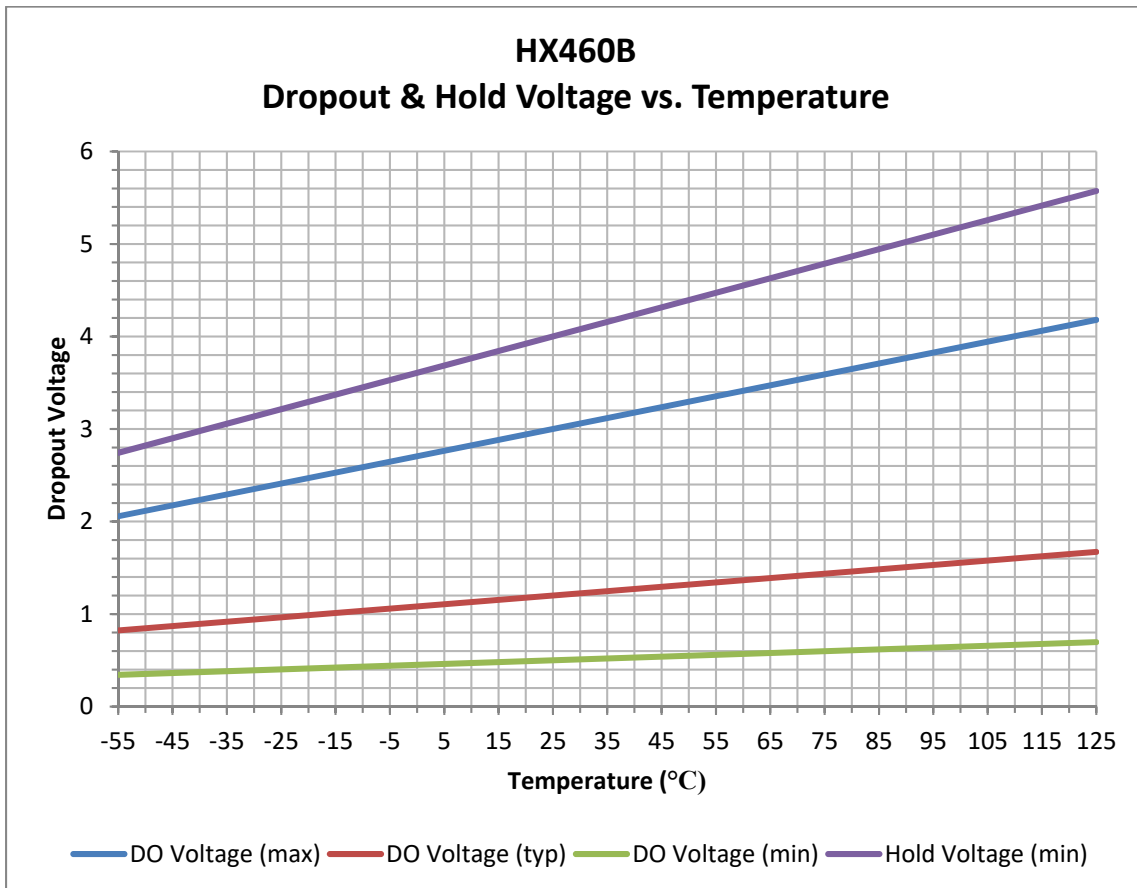


Figure 2.

APPLICATION NOTE

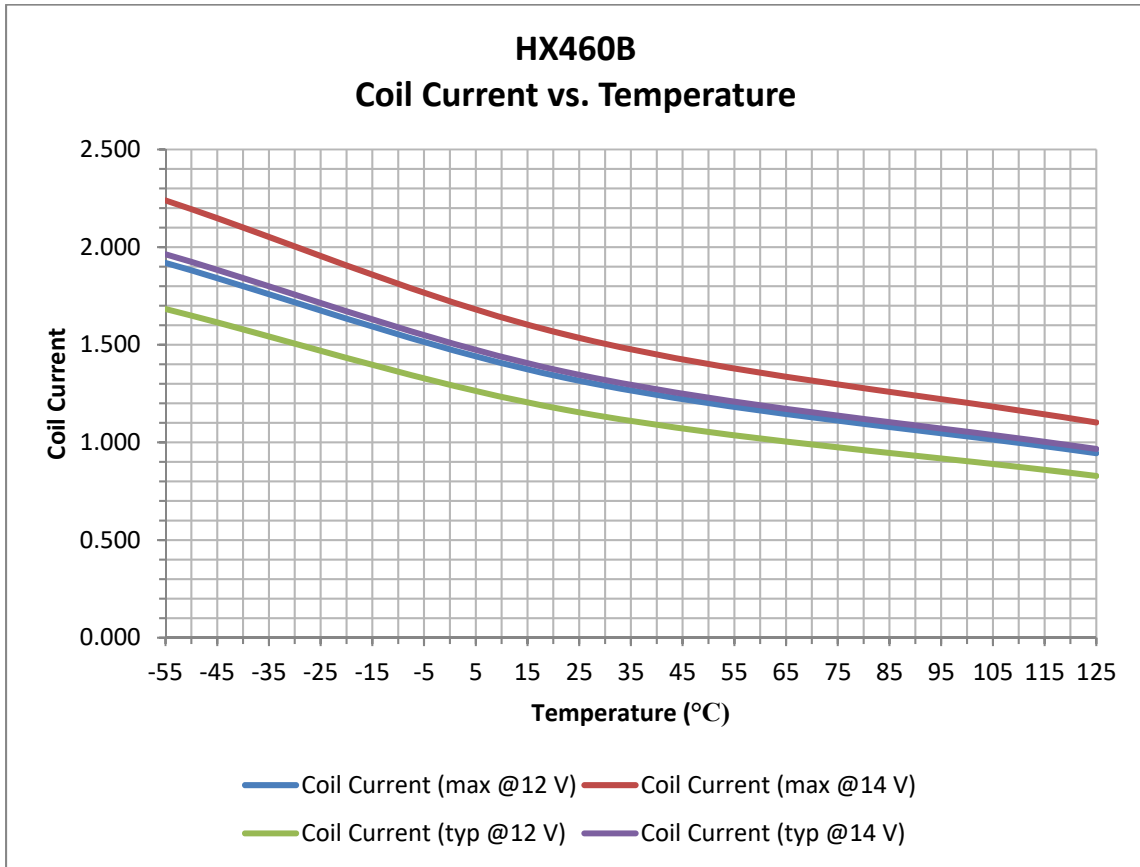


Figure 3.

APPLICATION NOTE

Table 1

Temp. °C	Pick up		Drop out			Hold	Coil Current				
	Voltage		Voltage				@12Vdc		@14Vdc		
	Typ	Max	Min	Typ	Max	Typ	Max	Typ	Max	Typ	Max
-55	4.66	5.14	0.34	0.82	2.06	2.74	1.683	1.919	1.963	2.239	
-50	4.80	5.29	0.35	0.85	2.12	2.82	1.636	1.866	1.909	2.177	
-45	4.93	5.44	0.36	0.87	2.17	2.90	1.592	1.815	1.857	2.118	
-40	5.06	5.58	0.37	0.89	2.23	2.98	1.550	1.767	1.808	2.062	
-35	5.20	5.73	0.38	0.92	2.29	3.06	1.510	1.722	1.762	2.009	
-30	5.33	5.88	0.39	0.94	2.35	3.14	1.472	1.679	1.717	1.958	
-25	5.46	6.03	0.40	0.96	2.41	3.21	1.436	1.638	1.675	1.911	
-20	5.60	6.17	0.41	0.99	2.47	3.29	1.402	1.598	1.635	1.865	
-15	5.73	6.32	0.42	1.01	2.53	3.37	1.369	1.561	1.597	1.821	
-10	5.86	6.47	0.43	1.03	2.59	3.45	1.338	1.526	1.561	1.780	
-5	6.00	6.62	0.44	1.06	2.65	3.53	1.308	1.492	1.526	1.740	
0	6.13	6.76	0.45	1.08	2.71	3.61	1.280	1.459	1.493	1.702	
5	6.27	6.91	0.46	1.11	2.76	3.69	1.252	1.428	1.461	1.666	
10	6.40	7.06	0.47	1.13	2.82	3.76	1.226	1.398	1.430	1.631	
15	6.53	7.21	0.48	1.15	2.88	3.84	1.201	1.370	1.401	1.598	
20	6.67	7.35	0.49	1.18	2.94	3.92	1.177	1.342	1.373	1.566	
25	6.80	7.50	0.50	1.20	3.00	4.00	1.154	1.316	1.346	1.535	
30	6.93	7.65	0.51	1.22	3.06	4.08	1.132	1.290	1.320	1.506	
35	7.07	7.79	0.52	1.25	3.12	4.16	1.110	1.266	1.295	1.477	
40	7.20	7.94	0.53	1.27	3.18	4.24	1.090	1.243	1.271	1.450	
45	7.33	8.09	0.54	1.29	3.24	4.31	1.070	1.220	1.248	1.423	
50	7.47	8.24	0.55	1.32	3.29	4.39	1.051	1.198	1.226	1.398	
55	7.60	8.38	0.56	1.34	3.35	4.47	1.032	1.177	1.204	1.373	
60	7.74	8.53	0.57	1.37	3.41	4.55	1.014	1.157	1.183	1.349	
65	7.87	8.68	0.58	1.39	3.47	4.63	0.997	1.137	1.163	1.327	
70	8.00	8.83	0.59	1.41	3.53	4.71	0.980	1.118	1.144	1.304	
75	8.14	8.97	0.60	1.44	3.59	4.79	0.964	1.100	1.125	1.283	
80	8.27	9.12	0.61	1.46	3.65	4.86	0.949	1.082	1.107	1.262	
85	8.40	9.27	0.62	1.48	3.71	4.94	0.934	1.065	1.089	1.242	
90	8.54	9.42	0.63	1.51	3.77	5.02	0.919	1.048	1.072	1.223	
95	8.67	9.56	0.64	1.53	3.83	5.10	0.905	1.032	1.056	1.204	
100	8.80	9.71	0.65	1.55	3.88	5.18	0.891	1.016	1.040	1.186	
105	8.94	9.86	0.66	1.58	3.94	5.26	0.878	1.001	1.024	1.168	
110	9.07	10.01	0.67	1.60	4.00	5.34	0.865	0.986	1.009	1.151	
115	9.21	10.15	0.68	1.62	4.06	5.41	0.852	0.972	0.994	1.134	
120	9.34	10.30	0.69	1.65	4.12	5.49	0.840	0.958	0.980	1.118	
125	9.47	10.45	0.70	1.67	4.18	5.57	0.828	0.945	0.966	1.102	

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