APPLICATION NOTE

Application Note AN-020

HX460C
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.

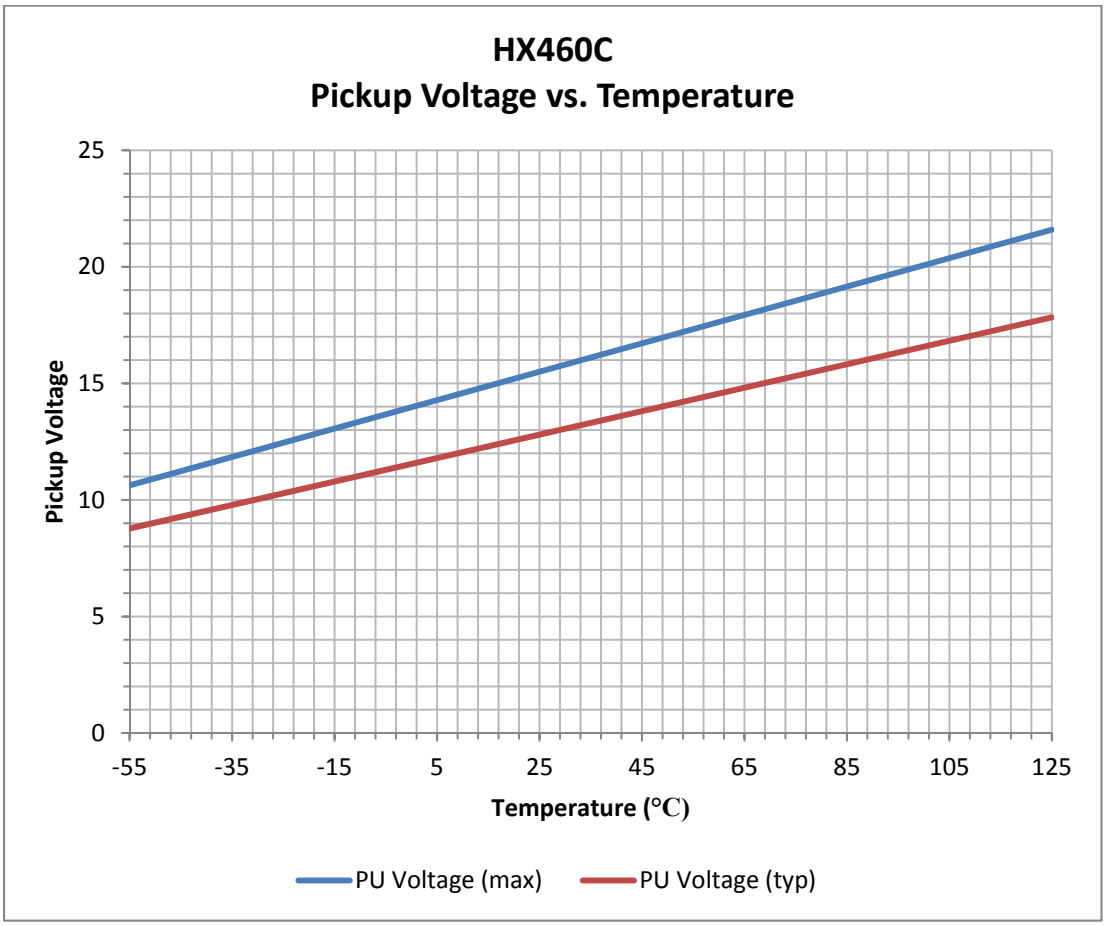

Figure 1.

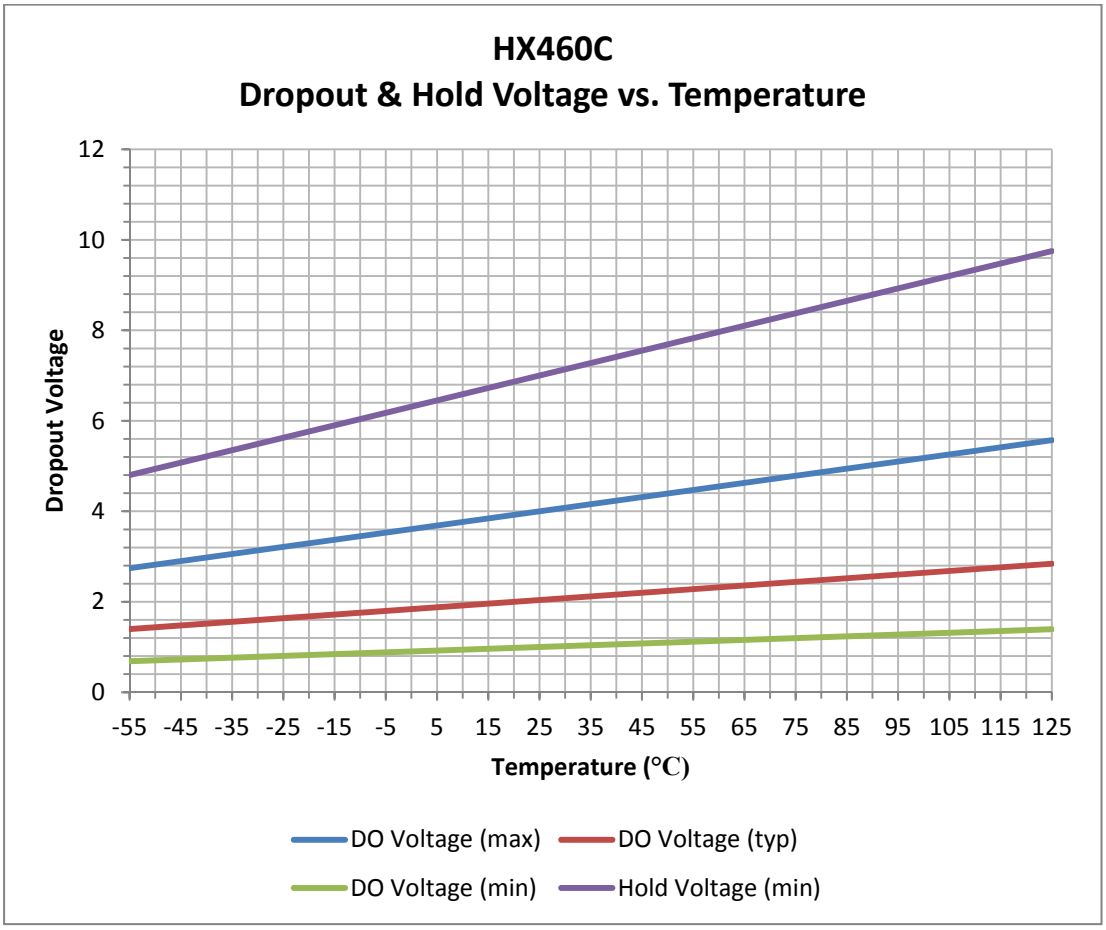
HX460C
Dropout & Hold Voltage vs. Temperature
Dropout Voltage
12
10
8
6
4
2
0
-55 -45 -35 -25 -15 -5 5 15 25 35 45 55 65 75 85 95 105 115 125
Temperature (°C)
DO Voltage (max)
DO Voltage (typ)
DO Voltage (min)
Hold Voltage (min)

Figure 2.

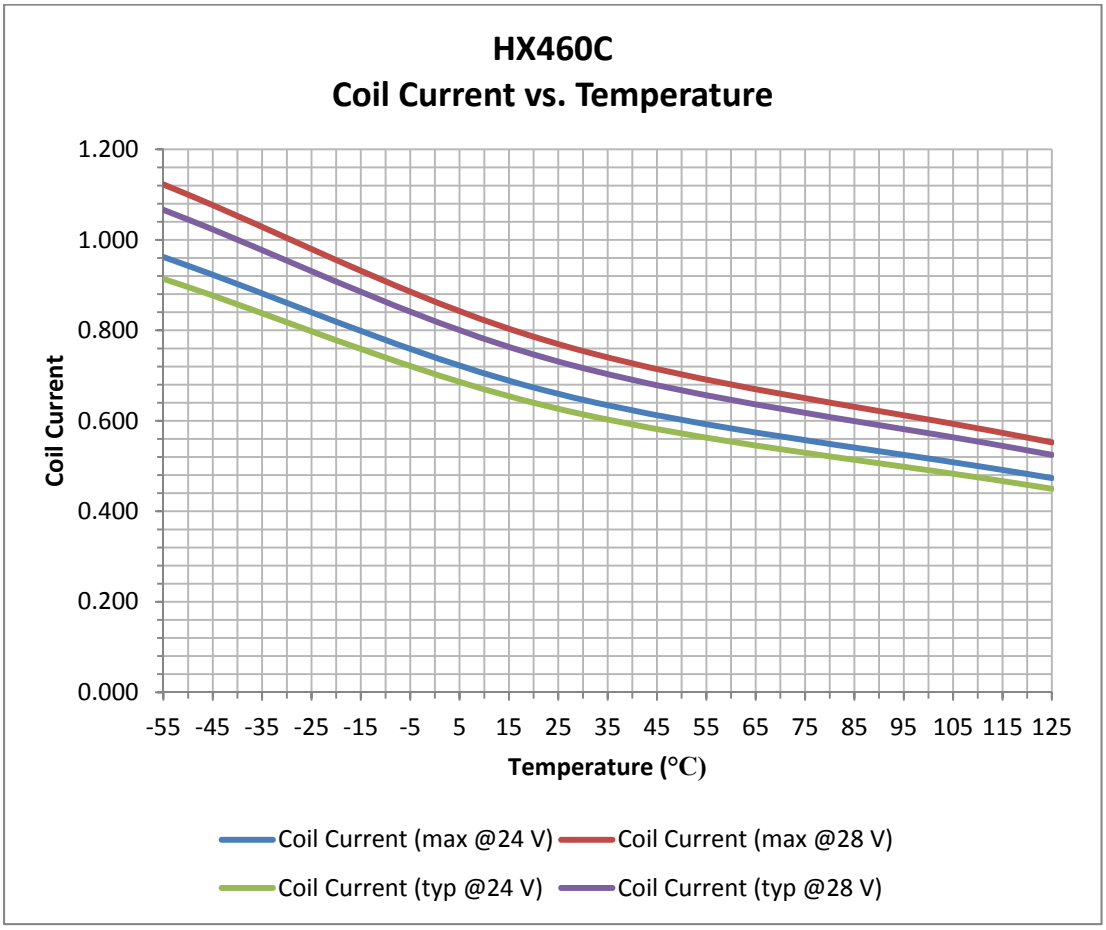
HX460C
Coil Current vs. Temperature
Coil Current
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-55 -45 -35 -25 -15 -5 5 15 25 35 45 55 65 75 85 95 105 115 125
Temperature (°C)
Coil Current (max @24 V)
Coil Current (max @28 V)
Coil Current (typ @24 V)
Coil Current (typ @28 V)

Figure 3.

GIGAVAC®
ADVANCED SWITCHING SOLUTIONS

APPLICATION NOTE

Table 1

Temp.	Pick up Voltage		Drop out Voltage			Hold Voltage	Coil Current @24Vdc		Coil Current @28Vdc	
°C	Typ	Max	Min	Typ	Max		Typ	Max	Typ	Max
-55	8.78	10.63	0.69	1.40	2.74	4.80	0.914	0.962	1.066	1.122
-50	9.03	10.93	0.71	1.44	2.82	4.94	0.889	0.935	1.037	1.091
-45	9.28	11.24	0.72	1.48	2.90	5.07	0.864	0.910	1.009	1.062
-40	9.53	11.54	0.74	1.52	2.98	5.21	0.842	0.886	0.982	1.034
-35	9.78	11.85	0.76	1.56	3.06	5.35	0.820	0.863	0.957	1.007
-30	10.03	12.15	0.78	1.60	3.14	5.49	0.799	0.842	0.933	0.982
-25	10.28	12.45	0.80	1.64	3.21	5.62	0.780	0.821	0.910	0.958
-20	10.54	12.76	0.82	1.68	3.29	5.76	0.761	0.801	0.888	0.935
-15	10.79	13.06	0.84	1.72	3.37	5.90	0.744	0.783	0.867	0.913
-10	11.04	13.37	0.86	1.76	3.45	6.04	0.727	0.765	0.848	0.892
-5	11.29	13.67	0.88	1.80	3.53	6.17	0.710	0.748	0.829	0.872
0	11.54	13.98	0.90	1.84	3.61	6.31	0.695	0.731	0.811	0.853
5	11.79	14.28	0.92	1.88	3.69	6.45	0.680	0.716	0.793	0.835
10	12.05	14.59	0.94	1.92	3.76	6.59	0.666	0.701	0.777	0.818
15	12.30	14.89	0.96	1.96	3.84	6.72	0.652	0.687	0.761	0.801
20	12.55	15.20	0.98	2.00	3.92	6.86	0.639	0.673	0.746	0.785
25	12.80	15.50	1.00	2.04	4.00	7.00	0.627	0.660	0.731	0.770
30	13.05	15.80	1.02	2.08	4.08	7.14	0.615	0.647	0.717	0.755
35	13.30	16.11	1.04	2.12	4.16	7.28	0.603	0.635	0.703	0.740
40	13.55	16.41	1.06	2.16	4.24	7.41	0.592	0.623	0.690	0.727
45	13.81	16.72	1.08	2.20	4.31	7.55	0.581	0.612	0.678	0.713
50	14.06	17.02	1.10	2.24	4.39	7.69	0.571	0.601	0.666	0.701
55	14.31	17.33	1.12	2.28	4.47	7.83	0.561	0.590	0.654	0.688
60	14.56	17.63	1.14	2.32	4.55	7.96	0.551	0.580	0.643	0.676
65	14.81	17.94	1.16	2.36	4.63	8.10	0.542	0.570	0.632	0.665
70	15.06	18.24	1.18	2.40	4.71	8.24	0.532	0.560	0.621	0.654
75	15.32	18.55	1.20	2.44	4.79	8.38	0.524	0.551	0.611	0.643
80	15.57	18.85	1.22	2.48	4.86	8.51	0.515	0.542	0.601	0.633
85	15.82	19.15	1.24	2.52	4.94	8.65	0.507	0.534	0.592	0.623
90	16.07	19.46	1.26	2.56	5.02	8.79	0.499	0.525	0.582	0.613
95	16.32	19.76	1.28	2.60	5.10	8.93	0.491	0.517	0.573	0.604
100	16.57	20.07	1.29	2.64	5.18	9.06	0.484	0.509	0.565	0.594
105	16.82	20.37	1.31	2.68	5.26	9.20	0.477	0.502	0.556	0.585
110	17.08	20.68	1.33	2.72	5.34	9.34	0.470	0.494	0.548	0.577
115	17.33	20.98	1.35	2.76	5.41	9.48	0.463	0.487	0.540	0.568
120	17.58	21.29	1.37	2.80	5.49	9.61	0.456	0.480	0.532	0.560
125	17.83	21.59	1.39	2.84	5.57	9.75	0.450	0.474	0.525	0.552

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