

CHARACTERISTICS OF HMC-6a~22b COILS

Frame	Rating Voltage	Inrush Current (A)		Holding Current (A)		Closing time (ms)	Opening time (ms)	Inrush (VA)	Holding (VA)	Consumption(W)		Pick-up Voltage		Drop-out Voltage		Remark			
		AC50HZ	AC60HZ	AC50HZ	AC60HZ					AC50HZ	AC60HZ	AC50HZ	AC60HZ	AC50HZ	AC60HZ				
HMC-6a~22b (50/60Hz)	24	2.975	2.915	0.430	0.330	12~22ms	4~19ms	90↓	11↓	2.1	1.5	16.0	18.5	11.00	11.0				
	48	1.605	1.470	0.180	0.170					2.1	1.5	33.0	35.0	21.00	24.0				
	110	0.657	0.636	0.095	0.074					2.1	1.5	72.0	75.0	49.00	58.0				
	220	0.340	0.320	0.040	0.028					2.1	1.5	140.0	142.0	100.00	105.0				
	240	0.286	0.264	0.038	0.027					2.1	1.5	145.0	155.0	110.00	125.0				
	380	0.210	0.190	0.030	0.023					2.1	1.5	250.0	295.0	170.00	200.0				
	400	0.196	0.184	0.019	0.021					2.1	1.5	265.0	230.0	175.00	210.0				
	440	0.135	0.110	0.018	0.019					2.1	1.5	305.0	330.0	180.00	215.0				
	500	0.124	0.107	0.017	0.016					2.1	1.5	345.0	385.0	200.00	240.0				
	550	0.122	0.102	0.017	0.015					2.1	1.5	370.0	425.0	240.00	270.0				
HMC-6a~22b (60Hz)	24	-	2.915	-	0.315					-	1.5	-	16.0	-	11.0		-	11.0	-
	48	-	1.470	-	0.165					-	1.5	-	33.0	-	24.0		-	24.0	-
	110	-	0.636	-	0.070					-	1.5	-	72.0	-	58.0		-	58.0	-
	120	-	0.615	-	0.065					-	1.5	-	75.0	-	64.0		-	64.0	-
	208	-	0.340	-	0.042					-	1.5	-	133.0	-	100.0		-	100.0	-
	220	-	0.330	-	0.027					-	1.5	-	145.0	-	105.0		-	105.0	-
	240	-	0.264	-	0.026					-	1.5	-	155.0	-	115.0		-	115.0	-
	277	-	0.250	-	0.024					-	1.5	-	190.0	-	155.0		-	155.0	-
	380	-	0.190	-	0.022					-	1.5	-	280.0	-	200.0		-	200.0	-
	440	-	0.110	-	0.019					-	1.5	-	310.0	-	220.0		-	220.0	-
	480	-	0.106	-	0.018					-	1.5	-	350.0	-	255.0		-	255.0	-
	600	-	0.095	-	0.015					-	1.5	-	420.0	-	280.0		-	280.0	-
	HMC-6a~22b (50Hz)	24	2.975	-	0.285					-	2.1	-	18.5	-	12.40		-	-	-
32		2.235	-	0.260	-					2.1	-	21.0	-	17.00	-		-	-	
36		2.120	-	0.244	-					2.1	-	29.0	-	15.00	-		-	-	
42		2.050	-	0.200	-					2.1	-	30.0	-	21.00	-		-	-	
48		1.605	-	0.170	-					2.1	-	36.0	-	23.00	-		-	-	
80		1.060	-	0.128	-					2.1	-	54.0	-	35.00	-		-	-	
100		0.765	-	0.080	-					2.1	-	73.0	-	48.00	-		-	-	
110		0.657	-	0.072	-					2.1	-	80.0	-	55.00	-		-	-	
220		0.340	-	0.036	-	2.1	-	150.0	-	105.00	-	-	-						
230		0.289	-	0.032	-	2.1	-	165.0	-	110.00	-	-	-						
240		0.286	-	0.033	-	2.1	-	170.0	-	120.00	-	-	-						
380		0.210	-	0.021	-	2.1	-	275.0	-	195.00	-	-	-						
400		0.196	-	0.020	-	2.1	-	290.0	-	190.00	-	-	-						
415		0.167	-	0.019	-	2.1	-	295.0	-	205.00	-	-	-						
440		0.135	-	0.017	-	2.1	-	330.0	-	230.00	-	-	-						
500		0.124	-	0.015	-	2.1	-	375.0	-	250.00	-	-	-						
550		0.120	-	0.013	-	2.1	-	390.0	-	285.00	-	-	-						

CHARACTERISTICS OF HMC-32a,40a COILS

Frame	Rating Voltage	Inrush Current (A)		Holding Current (A)		Closing time (ms)	Opening time (ms)	Inrush (VA)	Holding (VA)	Consumption(W)		Pick-up Voltage		Drop-out Voltage		Remark				
		AC50HZ	AC60HZ	AC50HZ	AC60HZ					AC50HZ	AC60HZ	AC50HZ	AC60HZ	AC50HZ	AC60HZ					
HMC-32a,40a (50/60Hz)	24	2.935	2.842	0.460	0.360	12~22ms	4~19ms	115↓	11↓	2.7	2.2	16.0	18.5	11.00	11.0					
	48	1.563	1.455	0.190	0.180					2.7	2.2	34.0	35.0	22.00	24.0					
	110	0.652	0.631	0.100	0.077					2.7	2.2	75.0	75.0	48.00	57.0					
	220	0.335	0.316	0.050	0.040					2.7	2.2	150.0	142.0	100.00	105.0					
	240	0.289	0.264	0.046	0.035					2.7	2.2	145.0	155.0	110.00	125.0					
	380	0.202	0.185	0.030	0.023					2.7	2.2	255.0	290.0	175.00	200.0					
	400	0.191	0.180	0.018	0.021					2.7	2.2	265.0	295.0	175.00	210.0					
	440	0.137	0.112	0.018	0.020					2.7	2.2	310.0	330.0	180.00	210.0					
	500	0.122	0.106	0.018	0.017					2.7	2.2	340.0	385.0	200.00	240.0					
	550	0.121	0.102	0.017	0.015					2.7	2.2	370.0	420.0	240.00	270.0					
HMC-32a,40a (60Hz)	24	-	2.842	-	0.338					-	2.2	-	16.0	-	12.0		-	-	-	-
	48	-	1.455	-	0.200					-	2.2	-	33.0	-	24.0		-	-	-	
	110	-	0.631	-	0.080					-	2.2	-	72.0	-	57.0		-	-	-	
	120	-	0.618	-	0.070					-	2.2	-	75.0	-	64.0		-	-	-	
	208	-	0.340	-	0.044					-	2.2	-	133.0	-	100.0		-	-	-	
	220	-	0.316	-	0.041					-	2.2	-	150.0	-	105.0		-	-	-	
	240	-	0.264	-	0.037					-	2.2	-	155.0	-	115.0		-	-	-	
	277	-	0.240	-	0.038					-	2.2	-	190.0	-	155.0		-	-	-	
	380	-	0.185	-	0.028					-	2.2	-	280.0	-	200.0		-	-	-	
	440	-	0.112	-	0.024					-	2.2	-	320.0	-	220.0		-	-	-	
480	-	0.108	-	0.020	-					2.2	-	350.0	-	255.0	-		-	-		
600	-	0.097	-	0.018	-					2.2	-	420.0	-	280.0	-		-	-		
HMC-32a,40a (50Hz)	24	2.935	-	0.286	-					2.7	-	18.4	-	12.40	-		-	-	-	
	32	2.362	-	0.265	-					2.7	-	22.0	-	17.00	-		-	-		
	36	2.581	-	0.245	-					2.7	-	29.0	-	17.50	-		-	-		
	42	2.079	-	0.202	-					2.7	-	30.0	-	21.00	-		-	-		
	48	1.563	-	0.174	-					2.7	-	37.0	-	22.00	-		-	-		
	80	1.075	-	0.134	-					2.7	-	54.0	-	35.00	-		-	-		
	100	0.743	-	0.083	-					2.7	-	73.0	-	48.00	-		-	-		
	110	0.652	-	0.074	-					2.7	-	81.0	-	54.00	-		-	-		
	220	0.335	-	0.036	-	2.7	-	153.0	-	110.00	-	-	-							
	230	0.298	-	0.034	-	2.7	-	165.0	-	115.00	-	-	-							
	240	0.289	-	0.034	-	2.7	-	170.0	-	120.00	-	-	-							
	380	0.202	-	0.021	-	2.7	-	275.0	-	195.00	-	-	-							
	400	0.191	-	0.022	-	2.7	-	290.0	-	195.00	-	-	-							
	415	0.171	-	0.022	-	2.7	-	295.0	-	205.00	-	-	-							
	440	0.137	-	0.017	-	2.7	-	325.0	-	230.00	-	-	-							
	500	0.122	-	0.015	-	2.7	-	375.0	-	250.00	-	-	-							
	550	0.121	-	0.013	-	2.7	-	390.0	-	285.00	-	-	-							

CHARACTERISTICS OF HMC-50a,65a COILS

Frame	Rating Voltage	Inrush Current (A)		Holding Current (A)		Closing time (ms)	Opening time (ms)	Inrush (VA)	Holding (VA)	Consumption(W)		Pick-up Voltage		Drop-out Voltage		Remark										
		AC50HZ	AC60HZ	AC50HZ	AC60HZ					AC50HZ	AC60HZ	AC50HZ	AC60HZ	AC50HZ	AC60HZ											
HMC-50a,60a (50/60Hz)	24	4.597	4.411	0.524	0.401	12~22ms	4~19ms	160↓	11↓	2.8	2.4	16.0	18.5	9.00	12.0											
	48	2.475	2.265	0.261	0.200					2.8	2.4	32.0	35.0	22.00	25.0											
	110	1.025	0.994	0.114	0.085					2.8	2.4	69.0	77.0	53.00	59.0											
	220	0.608	0.592	0.058	0.046					2.8	2.4	150.0	155.0	100.00	105.0											
	240	0.474	0.425	0.053	0.039					2.8	2.4	145.0	165.0	115.00	125.0											
	380	0.283	0.277	0.034	0.026					2.8	2.4	230.0	260.0	180.00	210.0											
	400	0.276	0.265	0.250	0.020					2.8	2.4	270.0	300.0	210.00	245.0											
	440	0.255	0.231	0.037	0.028					2.8	2.4	250.0	280.0	190.00	220.0											
	500	0.198	0.185	0.026	0.019					2.8	2.4	300.0	350.0	240.00	285.0											
	550	0.184	0.173	0.024	0.018					2.8	2.4	320.0	365.0	255.00	295.0											
HMC-50a,60a (60Hz)	24	-	4.411	-	0.335					12~22ms	4~19ms	160↓	11↓	-	2.4		-	16.0	-	12.0						
	48	-	2.265	-	0.200									-	2.4		-	33.0	-	25.0						
	110	-	0.994	-	0.088									-	2.4		-	75.0	-	55.0						
	120	-	0.990	-	0.082									-	2.4		-	80.0	-	55.0						
	208	-	0.600	-	0.048									-	2.4		-	85.0	-	100.0						
	220	-	0.592	-	0.045									-	2.4		-	150.0	-	105.0						
	240	-	0.425	-	0.042									-	2.4		-	155.0	-	115.0						
	277	-	0.380	-	0.040									-	2.4		-	180.0	-	155.0						
	380	-	0.277	-	0.032									-	2.4		-	280.0	-	205.0						
	440	-	0.231	-	0.030									-	2.4		-	300.0	-	225.0						
480	-	0.198	-	0.020	-									2.4	-		315.0	-	230.0							
600	-	0.166	-	0.018	-									2.4	-		380.0	-	295.0							
HMC-50a,60a (50Hz)	24	4.597	-	0.430	-									12~22ms	4~19ms		160↓	11↓	2.8	-		16.4	-	11.00	-	
	32	3.748	-	0.375	-														2.8	-		23.0	-	14.00	-	
	36	3.395	-	0.320	-														2.8	-		24.0	-	15.00	-	
	42	3.041	-	0.260	-														2.8	-		29.0	-	18.00	-	
	48	2.475	-	0.205	-														2.8	-		33.0	-	23.00	-	
	80	1.591	-	0.125	-														2.8	-		53.0	-	40.00	-	
	100	1.096	-	0.087	-														2.8	-		67.0	-	50.00	-	
	110	1.025	-	0.086	-														2.8	-		73.0	-	55.00	-	
	220	0.608	-	0.056	-	2.8	-	135.0	-	110.00	-															
	230	0.481	-	0.040	-	2.8	-	155.0	-	115.00	-															
	240	0.474	-	0.039	-	2.8	-	155.0	-	120.00	-															
	380	0.283	-	0.023	-	2.8	-	255.0	-	195.00	-															
	400	0.276	-	0.022	-	2.8	-	270.0	-	200.00	-															
	415	0.269	-	0.021	-	2.8	-	280.0	-	215.00	-															
	440	0.255	-	0.020	-	2.8	-	290.0	-	220.00	-															
500	0.198	-	0.016	-	2.8	-	360.0	-	270.00	-																
550	0.184	-	0.014	-	2.8	-	370.0	-	300.00	-																

CHARACTERISTICS OF HMC-75a~100a COILS

Frame	Rating Voltage	Inrush Current (A)		Holding Current (A)		Closing time (ms)	Opening time (ms)	Inrush (VA)	Holding (VA)	Consumption(W)		Pick-up Voltage		Drop-out Voltage		Remark
		AC50HZ	AC60HZ	AC50HZ	AC60HZ					AC50HZ	AC60HZ	AC50HZ	AC60HZ			
HMC-75a~100a (50/60Hz)	24	7.956	7.765	0.768	0.645	15~30ms	10~30ms	290 ↓	16 ↓	5.4	4.7	16.0	17.5	11.50	14.0	
	48	4.837	4.720	0.410	0.330					5.4	4.7	28.0	32.0	21.00	25.0	
	110	1.782	1.710	0.176	0.145					5.4	4.7	66.0	75.0	51.00	60.0	
	220	1.018	0.980	0.078	0.062					5.4	4.7	150.0	160.0	100.00	105.0	
	240	0.870	0.820	0.082	0.066					5.4	4.7	133.0	170.0	105.00	115.0	
	380	0.634	0.611	0.052	0.043					5.4	4.7	215.0	260.0	185.00	210.0	
	400	0.618	0.601	0.047	0.041					5.4	4.7	245.0	270.0	190.00	230.0	
	440	0.496	0.488	0.045	0.035					5.4	4.7	250.0	290.0	195.00	245.0	
	500	0.492	0.455	0.040	0.033					5.4	4.7	280.0	335.0	230.00	280.0	
	550	0.423	0.415	0.037	0.029					5.4	4.7	330.0	380.0	240.00	300.0	
HMC-75a~100a (60Hz)	24	-	7.765	-	0.650	15~30ms	10~30ms	290 ↓	16 ↓	-	4.7	-	17.0	-	14.0	
	48	-	4.720	-	0.330					-	4.7	-	33.0	-	25.0	
	110	-	1.710	-	0.156					-	4.7	-	75.0	-	60.0	
	120	-	1.685	-	0.155					-	4.7	-	80.0	-	60.0	
	208	-	1.013	-	0.065					-	4.7	-	135.0	-	100.0	
	220	-	0.980	-	0.061					-	4.7	-	160.0	-	110.0	
	240	-	0.820	-	0.060					-	4.7	-	170.0	-	140.0	
	277	-	0.791	-	0.054					-	4.7	-	190.0	-	155.0	
	380	-	0.611	-	0.046					-	4.7	-	280.0	-	215.0	
	440	-	0.488	-	0.038					-	4.7	-	300.0	-	240.0	
480	-	0.460	-	0.035	-	4.7	-	330.0	-	265.0						
600	-	0.398	-	0.310	-	4.7	-	420.0	-	280.0						
HMC-75a~100a (50Hz)	24	7.956	-	0.536	-	15~30ms	10~30ms	290 ↓	16 ↓	5.4	-	17.2	-	11.50	-	
	32	7.171	-	0.520	-					5.4	-	20.5	-	14.50	-	
	36	6.351	-	0.450	-					5.4	-	24.5	-	18.00	-	
	42	4.965	-	0.315	-					5.4	-	28.5	-	21.00	-	
	48	4.837	-	0.299	-					5.4	-	33.0	-	22.50	-	
	80	2.369	-	0.166	-					5.4	-	63.5	-	33.00	-	
	100	1.924	-	0.129	-					5.4	-	74.0	-	47.00	-	
	110	1.782	-	0.118	-					5.4	-	80.0	-	50.00	-	
	220	1.018	-	0.056	-					5.4	-	145.0	-	100.00	-	
	230	0.983	-	0.058	-					5.4	-	150.0	-	120.00	-	
	240	0.870	-	0.053	-					5.4	-	155.0	-	125.00	-	
	380	0.634	-	0.035	-					5.4	-	240.0	-	200.00	-	
	400	0.618	-	0.033	-					5.4	-	250.0	-	200.00	-	
	415	0.603	-	0.032	-					5.4	-	270.0	-	210.00	-	
	440	0.496	-	0.030	-					5.4	-	275.0	-	230.00	-	
	500	0.492	-	0.029	-					5.4	-	315.0	-	260.00	-	
550	0.423	-	0.024	-	5.4	-	350.0	-	300.00	-						

CHARACTERISTICS OF HMC-130a,150a COILS

Frame	Rating Voltage	Inrush Current (A)		Holding Current (A)		Closing time (ms)	Opening time (ms)	Inrush (VA)	Holding (VA)	Consumption(W)		Pick-up Voltage		Drop-out Voltage		Remark
		AC50HZ	AC60HZ	AC50HZ	AC60HZ					AC50HZ	AC60HZ	AC50HZ	AC60HZ	AC50HZ	AC60HZ	
HMC-130a,150a (50/60Hz)	24	8.800	9.190	0.350	0.410	20~40ms↓	60~70ms↓	220↓	25↓	2.7	3.6	18.0	17.5	14.00	13.0	
	48	3.950	4.240	0.168	0.198					2.7	3.6	34.0	37.1	25.00	23.0	
	110	1.500	1.580	0.205	0.231					2.7	3.6	84.0	80.0	60.00	55.0	
	220	0.720	0.760	0.085	0.099					2.7	3.6	165.0	160.0	105.00	100.0	
	300	0.690	0.710	0.050	0.059					2.7	3.6	210.0	200.0	165.00	160.0	
	400	0.490	0.500	0.040	0.046					2.7	3.6	280.0	270.0	240.00	200.0	
	500	0.310	0.320	0.027	0.032					2.7	3.6	360.0	340.0	290.00	270.0	

CHARACTERISTICS OF HMC-6a~22b DC COILS

Frame	Rating Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)	Remark
HMC-6a~22b	12	0.790	0.790	7.5	3.0	35~50ms	4~19ms	
	20	0.450	0.450	12.5	4.6			
	24	0.380	0.380	16.0	5.5			
	48	0.195	0.195	29.0	12.5			
	60	0.142	0.142	36.0	15.0			
	80	0.105	0.105	50.0	19.0			
	100	0.095	0.095	60.0	23.0			
	110	0.084	0.084	73.0	30.0			
	125	0.072	0.072	82.0	33.0			
	200	0.047	0.047	115.0	45.0			
	220	0.043	0.043	145.0	55.0			
	250	0.038	0.038	155.0	65.0			

CHARACTERISTICS OF HMC-32a,40a DC COILS

Frame	Rating Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)	Remark
HMC-32a,40a	12	0.702	0.702	8.5	3.4	50~65ms	4~19ms	
	20	0.382	0.382	13.8	5.6			
	24	0.350	0.350	16.3	6.3			
	48	0.174	0.174	31.0	13.5			
	60	0.127	0.127	42.0	18.0			
	80	0.098	0.098	57.0	23.0			
	100	0.091	0.091	67.0	27.0			
	110	0.075	0.075	77.0	32.0			
	125	0.068	0.068	86.0	36.0			
	200	0.047	0.047	127.0	55.0			
	220	0.043	0.043	155.0	63.0			
	250	0.037	0.037	160.0	70.0			

CHARACTERISTICS OF HMC-50a,65a DC COILS

Frame	Rating Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)	Remark
HMC-50a,65a	12	0.790	0.790	8.7	2.6	50~65ms	4~19ms	
	20	0.460	0.460	15.0	4.2			
	24	0.380	0.380	17.5	5.0			
	48	0.190	0.190	31.5	10.0			
	60	0.150	0.150	43.0	12.5			
	80	0.105	0.105	55.0	19.0			
	100	0.089	0.089	62.0	21.0			
	110	0.080	0.080	68.0	26.0			
	125	0.068	0.068	88.0	27.0			
	200	0.036	0.036	150.0	47.0			
	220	0.036	0.036	155.0	50.0			
	250	0.037	0.037	170.0	55.0			

CHARACTERISTICS OF HMC-75a~100a DC COILS

Frame	Rating Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)	Remark
HMC-75a~100a	12	1.450	1.450	8.1	2.5	100~120ms	10~25ms	
	20	0.850	0.850	16.2	4.2			
	24	0.740	0.740	17.5	4.4			
	48	0.350	0.350	34.0	10.5			
	60	0.277	0.277	41.0	12.0			
	80	0.230	0.230	52.0	15.0			
	100	0.185	0.185	63.0	18.0			
	110	0.165	0.165	78.0	22.0			
	125	0.155	0.155	80.0	21.0			
	200	0.103	0.103	140.0	35.0			
	220	0.088	0.088	140.0	40.0			
	250	0.080	0.080	155.0	45.0			

CHARACTERISTICS OF HMC-130a,150a DC COILS

Frame	Rating Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)	Remark
HMC-130a,150a	24	6.700	0.240	17.5	4.5	70~80ms	60~70ms	
	48	3.300	0.155	33.0	11.0			
	110	2.000	0.068	75.0	25.0			
	220	0.950	0.040	150.0	50.0			